MAY 22 1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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Price 50 Cents

STEVENS RICE
UNIV MICROFILMS
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ANN ARBOR MICH A

FREFLO*— a mixture of oil-soluble chemicals designed to remove water blocks in oil and gas wells — by reducing surface tension, attacking interfacial tension and breaking emulsions. 10-gallon drum contains enough for 1000 gallons of treating solution. Available at Dowell stations.

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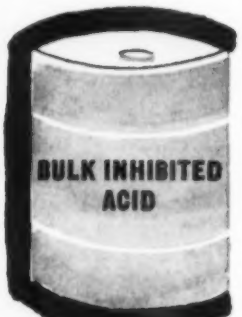

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This is Ethyl's Bill Van Wyck

On the West Coast, one of Ethyl's key contact men with customers is Bill Van Wyck—Account Representative.

It's Bill's job to know his customers so well that he's always alert to their service needs; to keep them informed, at management level, of exactly what Ethyl has to offer—and then follow through with Ethyl specialists. In effect, Van Wyck acts as a team leader and pulls *all* of Ethyl's services together.

Like all Ethyl Account Representatives, Van Wyck has had broad experience in oil company service work. He joined Ethyl in 1944, was first a Safety Engineer, then worked extensively with Ethyl training presentations for oil company marketing personnel. As other assignments followed, Bill became ideally suited for his present responsibility.

1. In Ethyl's Los Angeles auditorium, Van Wyck and Marv Russell, an Ethyl Automotive Specialist, present a dealer training program—built around Ethyl's Automotive Training Kit. Bill recommended this Ethyl service to supplement his customer's program. Then he followed up with all arrangements.

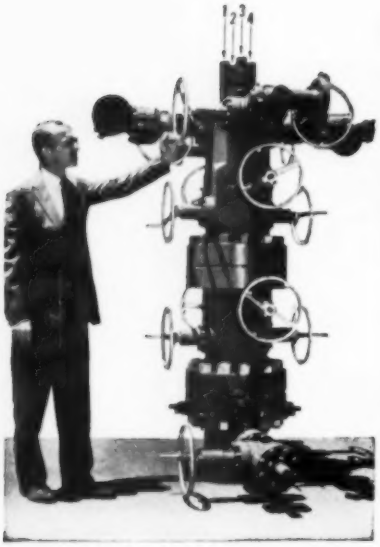
2. Explaining Ethyl's multi-cylinder demonstration engine to oil company executives, Van Wyck shows how the versatile unit can be used in the promotion of a new gasoline. A mobile unit, this Ethyl demonstration tool gives easy-to-understand evidence of the relative effectiveness of different fuels.

3. With an oil company management group, Bill points out the highlights of the latest technical report made available by Ethyl Research. Gil Way, Ethyl Research Representative (back to camera), accompanied Bill on this visit to discuss the significance of the data and its value to this company.

4. Informing his Ethyl customers of product developments is always an important part of an Account Representative's responsibility. Here, with Chief Automotive Engineer Ed Ellerbe, Van Wyck presents Ethyl's Multi-Purpose Additive story to a group of oil company marketers.

Ethyl's Account Representatives are charged with one responsibility: To personify Ethyl's belief that service is just as important as product.

ETHYL CORPORATION
New York 17, N.Y.



4 OIL WELLS IN ONE HOLE

The fortunate circumstance of 4 producing sands in one well means more today than ever before. The reason is Cameron's new quadruple completion equipment – the first of its kind. This equipment, which is already in service, includes all of the time tested features of the other highly successful Cameron multiple completions, plus a new unitized Christmas tree. Production strings may be run or pulled independently. The 4 segmented tubing hangers provide maximum clearance for running special tools. Each hanger segment will support full joint strength loads. There are triple seals for safety and positive orientation of hangers. Cameron's reliable back pressure valves afford complete control of well pressure through every phase of setting.

In this design only the size of the casing limits the number of parallel strings that may be hung. So with 1, 2, 3, 4 or even more pay zones, you may COUNT ON CAMERON for multiple production and multiple profits.

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DEPT/Opinions

Views That Make News . . .

"If we are to measure up as good citizens and good neighbors, all of us in the industry must accept traffic safety as one of our most important civic responsibilities."

—H. W. FERGUSON
Vice-President
Humble Oil & Refining Co.

"The major fact of life today is this: A company engaged in the oil business to be successful must be integrated. It must find and produce crude, manufacture products, and sell these products in one continuous process to realize the greatest profit, and it must do this with world markets in mind."

—G. F. GETTY II
President
Tidewater Oil Co.

. . . and Letters

Dear Sir:

Thank you for your mention [PW—Apr.24'59,p47] of the Texas Railroad Commission granting 160-acre spacing for the Perryton West (8,100-ft. Morrow sand) pool.

This field has seven producing wells at this time, rather than the four mentioned in your article, and the maximum width of proven productive area at this time is 1 mi. and the length is 2½ mi. proven. It is also shown to have an oil column of 175 ft.

A. R. BALLOU
Sun Oil Co.
Dallas, Tex.

Dear Sir:

The caption under the picture [PW—Apr.24'59,p50] refers to Mobil Oil Co.'s Paulsboro Coker of 19,000 b/d capacity as the "largest initial capacity coker ever built in the U.S."

We would like to call attention to Tidewater's fluid cokers at the Avon and Delaware refineries, each of 42,000 b/d capacity, with coke make substantially greater than the Paulsboro unit.

JAMES MCDONALD
Administrative Manager of Manufacturing
Tidewater Oil Co.

• Editor's note: Mr. McDonald is right; we were wrong. The caption for the Paulsboro coker should have read: "largest initial capacity delayed coker ever built."

Dear Sir:

I realize that PETROLEUM WEEK's objective is to give the executives of the oil industry a quick resumé of current items in all the phases of our integrated business. . . .

However, we marketers must depend on your transmitting information on marketing to the really top executives in our companies who, in most cases in the past, have not been primarily interested in the marketing phase of the oil business. I believe that in the last year many of these executives have become more and more conscious of the need to understand petroleum marketing, and I think you'd do the industry a real favor if you spent more time on your marketing articles.

I was particularly disturbed by the article . . . entitled "What Price Federal Fair Trade?" [PW—Apr.17'59, p62]. Of course, there is danger of further government control; but years ago when the industry set up the machinery to control the production of crude, the real students of economy realized that you cannot arbitrarily tinker with one phase of a production line without causing problems all along the line. What you should now do is write an article on "What Price Without Fair Trade?"

This great industry looks to thousands of little businessmen to take expensively manufactured and expensively advertised products to the public. To the consumer, gasoline is a convenience item, and he expects to find it everywhere. If we are to provide the motorist with our products conveniently on every highway, we must have a legal way to protect the value of our branded gasoline. Therefore, we cannot permit an independent dealer (whose independence the government fights to maintain) to destroy the value of the brand for us or, what is more important, for his fellow dealer selling the same brand.

DWIGHT T. COLLEY
Vice-President & General Manager of Marketing
The Atlantic Refining Co.

PETROLEUM WEEK will publish reader comments each week. Address letters to LeRoy Menzing, Editor, PETROLEUM WEEK, 330 W. 42nd St., New York 36, N. Y.

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INSIDE *Slant*

FLOW UP, GROSS DOWN

Strict enforcement of mandatory import controls will not prevent 1959 income from U.S. oil sales from dropping below 1957.

Restoration of downward adjustments in crude prices, of course, could change everything. There is nothing on the horizon to indicate over-all upward adjustment, however.

This is particularly true in view of world-wide crude surpluses, as well as producing rates in excess of demand. The high level of refinery runs and too much product in storage are other deterring factors.

Only recently, the IPAA Supply & Demand Committee estimated that U.S. crude production would average 7,335,000 b/d in 1959.

At the current average price of $3.04 per bbl., the 1959 productive rate will result in gross income of $22.3-million a day from crude sales.

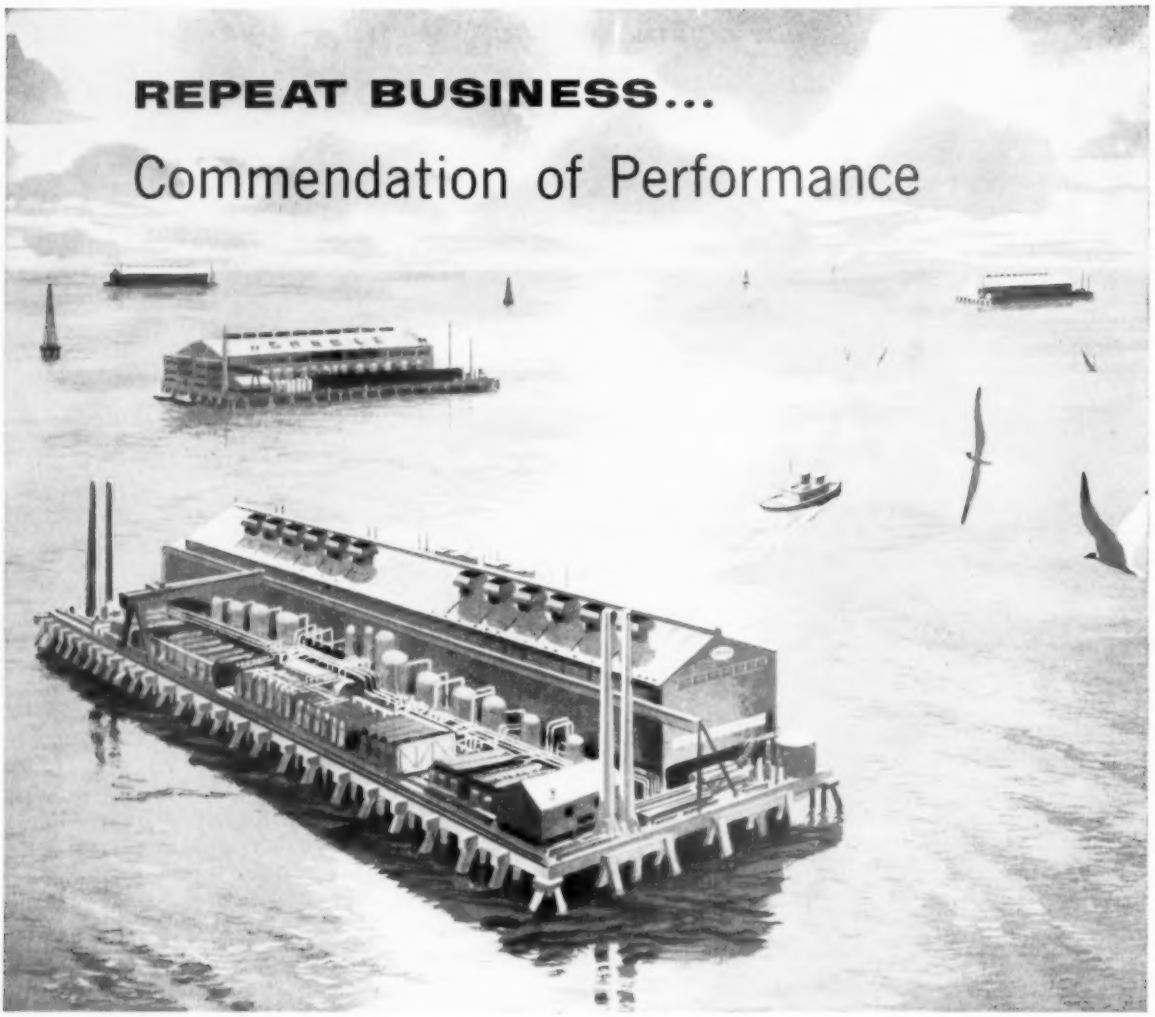
This is $400,000 a day less than was realized in 1957, despite the fact that crude production this year, if estimates prove correct, will be 165,000 b/d higher than in 1957.

The reason is that the average price of crude in 1957 was $3.16 per bbl. The daily average production rate was 7,170,000 bbl., for gross income of $22.7-million.

LeRoy Menzing
EDITOR

REPEAT BUSINESS...

Commendation of Performance



Creole Petroleum Corporation of Venezuela, one of the world's largest producers of crude oil, has pursued a dedicated course of conservation and maximum utilization of Venezuela's natural resources. In so doing, complex engineering problems in gas injection have been created.

An organization of the magnitude of Creole can readily command the very best engineering and construction talent available . . . and Brown & Root felt signally honored when in 1952 they were awarded a contract to design and construct a 60,000 horsepower gas injection station, to be located 7 miles from shore in Lake Maracaibo. The job was loaded with "firsts" and superlatives. For example, it was the first time centrifugal compressors were ever used to compress gas to 2000 p.s.i. This tremendous amount of horsepower was to be housed on a platform in 62 feet of water, with all the related problems of vibration, corrosion, noise and self-containment.

Evidence that the client was pleased with this $20 million project came when Brown & Root was awarded a contract to design and construct Conservation Plant Tía Juana Two of 84,000 horsepower, and then again Brown & Root was successful in obtaining the design and construction contracts for Tía Juana Plant Three of 98,000 horsepower. Conservation Plant Bachaquero One, Creole's fourth repressuring station, is currently on Brown & Root's drawing boards.

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60-Second Summary / WHAT'S HAPPENING IN OIL

AT-A-GLANCE PETROLEUM WEEK

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Underground nuclear explosions may save oil men plenty of time and money. It now appears that an atomic bomb can make a storage cavity much more cheaply than normal methods, and can reduce oil shale to a recoverable liquid. But A-bomb technology needs plenty of development. . . . p. 12

•

The stage is being set for Canadian gas to enter the Midwest. Canada is initiating licensing plans, and one U.S. buyer is ready if the U.S. government will approve. . . . p. 11

•

Two Hunton lime gas discoveries in northwestern Oklahoma are causing operators to take a new look at the area. The latest find by Magnolia Petroleum is termed the best in the state in five years. . . . p. 18

•

Anxiety reigns in Iraq, but government relations with Iraq Petroleum Co. are calm. Premier Kassim wants more revenues, but has not demanded basic changes in IPC's contract. . . . p. 33

•

Shell Oil has found that balloons make good batch separators in product pipelines. The inflatable spheres, it reports, will save an estimated $265,000 annually by reducing commingling. . . . p. 36

•

Texaco is the latest oil company to enter the rocket-fuel business. It acquired a small, but well-established solid fuel maker. . . . p. 13

•

Shallow drilling in the Delaware Basin is spreading to New Mexico. Currently, 12 of the 34 rigs drilling in the area are at New Mexico locations. In the past two years, the Texas portion has been a "hot" area. . . . p. 22

•

The Oxo process for catalytic manufacture of aldehydes and alcohols is catching on with a growing number of processors. Three large oil companies and two chemical companies are using the technique in the U.S. . . . p. 28

•

A new rotary-percussion drill that can operate on air or gas has only one moving part. Developed by Pan American Petroleum Corp., it has been tested on several locations. It offers high penetration rates and long bit life. . . . p. 24

•

Farm demand for petroleum shows a conflicting pattern. It's rising on the West Coast at a rate of 3% a year, but slackening off in midwestern corn and wheat belts. . . . p. 38

Up to the Minute / SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK Copyright

May 22, 1959

The Justice Dept. sees "no useful purpose" in continuing its annual reports on the Interstate Oil Compact. Deputy Attorney General Lawrence Walsh asked the House Interstate Commerce Committee, now considering a new four-year extension of the compact, to drop the report requirement.

Government attorneys fear that reporting on the compact might prejudice their chances in oil antitrust cases. The compact is an association of oil-producing states—not companies—but the latter participate on compact committees. And Justice reasons that its blessing to the compact could be interpreted to mean a blessing to company operations.

The surprise move is running into Congressional opposition. Consumer-state congressmen say they will oppose any move to change the requirement for an antitrust check.

•

The June crude allowable in Texas was cut 282,738 b/d, the sharpest reduction since March, 1958. The Railroad Commission adhered to the requests from six large buyers and pleas for a "drastic" cut by some producers and ordered a 10-day schedule for June, setting an initial allowable of 2,904,414 b/d. Production now is on a 12-day basis.

•

Humble Oil & Refining will expand its marketing operations to Arizona. Humble now markets only in Texas and New Mexico, but the company expects to acquire the marketing properties of Sahuaro Petroleum Products, of Phoenix, by July.

•

A Shell affiliate has found the first oil in the western Sahara. The discovery, at Azzene, 60 mi. east of Adrar, tested 15 bbl. an hour from 2,378-418 ft. between the Gothlandian and Lower Devonian.

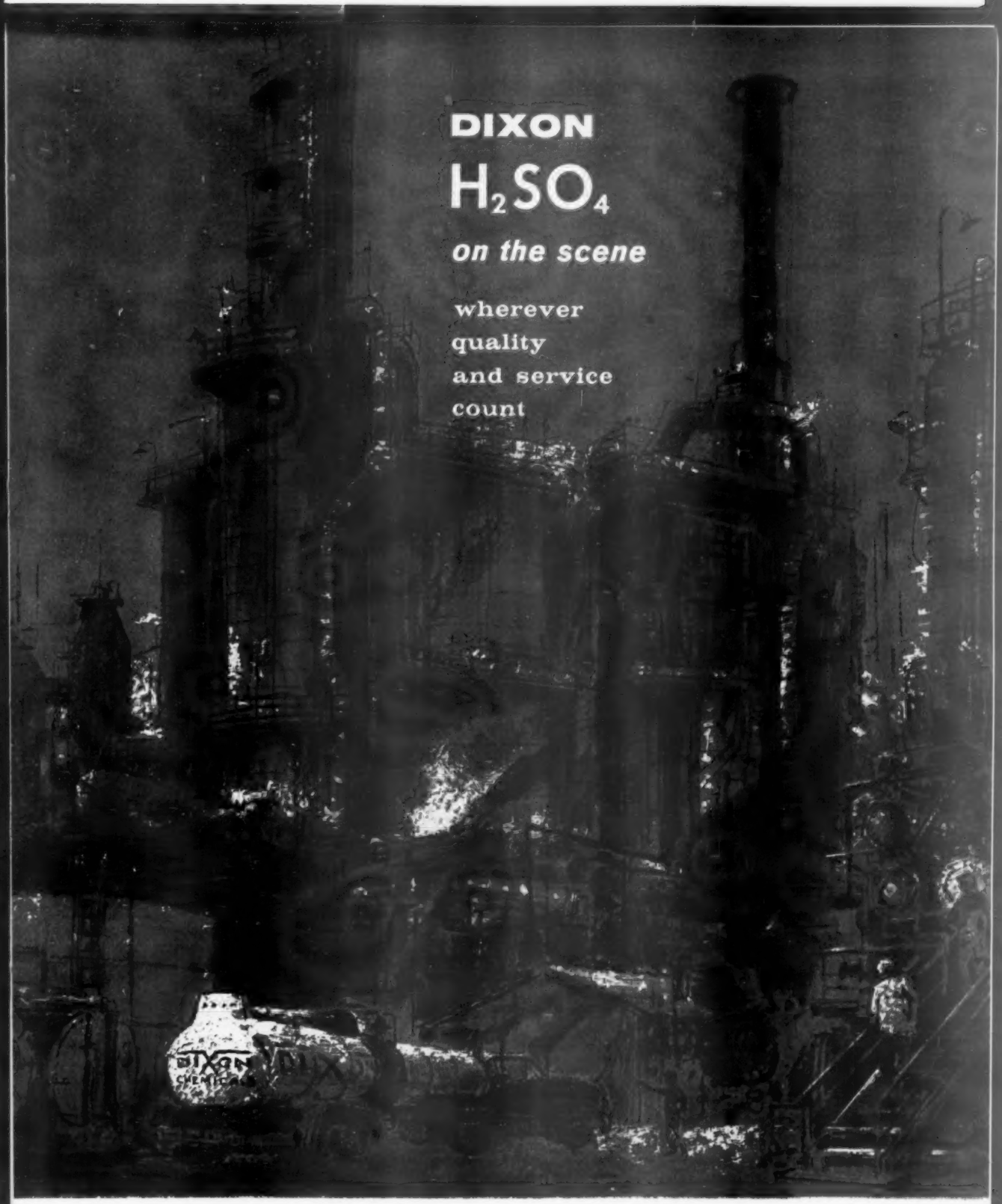
•

Esso Standard, Humble Oil & Refining, and El Paso Natural Gas Products have a three-way trade of imported oil for domestic. El Paso will deliver 169,120 bbl. of Venezuelan oil to Esso. The latter will deliver 150,560 bbl. of South Louisiana crude to El Paso to be exchanged with Humble for 157,255 bbl. of Spraberry (Tex.) crude.

•

"Quota-free" Canadian oil is beginning to hit U.S. producers in the Upper Midwest. At least one seller has lost a crude contract to a Michigan refiner, since delivered prices of Canadian oil are from 14¢ to 17¢ a bbl. under U.S. prices.

Petroleum Week will analyze the coming computer-controlled processing in a special report next week. This may be the most significant change in refining since the advent of cat cracking.



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PRODUCTION EQUIPMENT: JONES & LAUGHLIN CASING, TUBING, LINE PIPE AND WIRE ROPE, AXELSON PUMPS AND SUCKER RODS, CABOT PUMPING UNITS, CENTURY MOTORS, FAIRBANKS-MORSE ENGINES, CONTINENTAL TANKS.

So Begins The Last Chapter

The story of oil, with all its attendant theories of origin, migration, and entrapment, can be a very absorbing subject. The mere fact that oil's "life" represents a fascinating round-trip — from surface, to deposit, and back to the surface again — is material enough for many intriguing papers.

But when you pin **X** number of dollars to the end of **X** feet of drill pipe, the subject becomes considerably less glamorous.

So begins the last chapter. Payout or play-out? What are the formation's basic productive characteristics? Where are the most effective (and safest) completion points? How susceptible is the reservoir to some type of secondary recovery process?

What field methods are best suited to maintain optimum balance between the reservoir's ability and the operator's desired income? What are the most economically feasible approaches — for development, for banking?

Core Lab's fully-integrated reservoir engineering services — *Well Logging, Core Analysis, Reservoir Fluid Analysis, Engineering and Consulting, and Research* — play vital roles in answering these and an endless procession of other vital questions.

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Midwest May Get Canadian Gas Yet

The stage was set this week for the eventual movement of Canadian gas into the U.S. Midwest, and for additional Canadian exports to the West Coast area.

Such exports of Canadian gas—exports in addition to the existing movement from Alberta to the El Paso-Northwest system to California—were all set at one time. But they were held up by Canada's decision to appoint a Royal Commission to study its overall energy situation.

During the last two weeks, however, the obstacles holding back Canadian gas exports began to be cleared—though it will be some time yet before final decisions are reached.

First, Trans-Canada Pipelines, Ltd., applied for an export permit to deliver 200-million cf/d of gas to Midwestern Gas Transmission Co.

The gas would be delivered to Midwestern at Emerson, Manitoba, for shipment through a proposed 500-mi. Midwestern line to the Chicago-Gary area. Also, Trans-Canada wants to supply Midwestern's parent, Tennessee Gas Transmission Co., with an unstated volume of gas, on an interruptible basis, at Niagara Falls.

A similar proposal was made more than a year ago by TGT and Midwestern, but the U.S. Federal Power Commission turned it down last October because Trans-Canada then did not have an export permit. It could not, therefore, meet the FPC's requirement of a guaranteed long-term supply.

Since the Trans-Canada application, the Canadian Government has taken steps to create a National Energy Board to issue export, as well as import, permits for natural gas—a move that was recommended last fall by the Royal Commission on Energy.

Trade Minister Gordon Churchill this week asked the Canadian Parliament to approve the creation of the board to assume the regulatory authority over gas pipelines.

Specifically, the board, under the bill recommended by Churchill, would have the power to recommend the granting of licenses for export and import of gas. It would also have the authority to fix tolls and other charges of natural gas and oil pipelines—but not to regulate profits.

Permits for gas exports would be for a 25-year period.

The regulatory authority of the proposed Canadian board would not extend to licensing of crude imports and exports—a power that many Canadians feared would be given the board.

The Royal (Borden) Commission had recommended the creation of an energy board with such authority over all liquid and gaseous hydrocarbons—a move that, in effect, would have brought the Canadian oil and gas industry close to federal regulation.

Churchill, in his statement to the House of Commons, attempting to allay the industry's fears of overregulation, commented, "We recognize the need for, and welcome, capital, whether domestic or foreign, for investment in the energy and associated industries, and we believe such capital should enjoy a fair and reasonable rate of return."

Recommendations for restricting crude imports into Canada could be made in the final report of the Borden Commission, due this summer.

Even quick action by the Canadian lawmakers would mean that the creation of the National Energy Board is still six months off. And some Canadians want a decision on gas exports to the U.S. sooner than that.

Arthur Smith, a member of Parliament from Calgary, heads a group that asked the government this week to speed action on both the new Trans-Canada export permit and a longer-pending joint application of Alberta &

Oil Man's Album

Pipeline Laying Always Was a 'Team' Job

An 8-in. crude line was a major project 31 years ago, when mule-drawn wagons creaked through East Texas assisting the building of Texaco's Palestine-to-Corsicana line in 1928. Two years later the East Texas field came in. Crude lines since have grown rapidly in length and increased four-fold in size.

(No. 30 in a Petroleum Week series.)

Southern Gas Co. and Westcoast Transmission Co., Ltd. (PW—Apr.3 '59,p65).

The Alberta Oil & Gas Conservation Board previously approved the export permit of the latter two companies, scaling down their requests to a combined total of 565-million cf/d over a 17- to 20-year period. The gas, if both the Canadian federal government and the U.S. FPC approve, would go to California utilities.

Canadian gas producers see the U.S. Midwest as a "natural" outlet for gas moving through the eastbound Trans-Canadian line, particularly since Midwestern was recently authorized to enter the Chicago-Gary area.

The entry authorization was granted by FPC last week, permitting Midwestern to supply 360-million cf/d of U.S. gas to Peoples Gas Light & Coke Co., Northern Indiana Public Service Co., and Northern Illinois Gas Co.

Midwestern will build 350 mi. of 30-in. line from TGT's main line at Portland, Tenn., to Joliet, Ill. TGT will build 157 mi. of 36-in. line, paralleling its present lines in Louisiana, Mississippi, and Tennessee, to supply Midwestern with gas from Texas and Louisiana, including offshore areas.

FPC permitted a commodity rate charge by Midwestern of 22¢ per Mcf., but required that the company come in after one year for revision.

A-Bombs for Oil: Help—and Problems

Underground atomic bomb explosions may save oil men plenty of time and money, but they'll cause problems undreamed of a short time ago.

This was made clearer than ever at last week's second "Plowshare" symposium on industrial and scientific uses of nuclear explosions.

On savings, for instance, it now appears that nuclear explosions can provide underground oil storage caverns far more cheaply than present methods.

R. H. Carlson, of Sandia Corp., Albuquerque, N. M., told the Plowshare meeting that studies "based on rather conservative assumptions suggest strongly that the use of nuclear explosives could result in very large savings" in excavating underground storage caverns.

"Furthermore," Carlson said, "there seems to be no engineering or technical reasons why such a technique could not be used."

Carlson gave this example:

- A 7-million-bbl. underground storage cavern, excavated with conventional present-day techniques, would cost about $28-million.
- A 100-kiloton nuclear device could excavate the same-sized cavity at a cost of about $1.3-million. This estimate is based on a probable cost of $850,000 for delivery, arming, and firing of the nuclear explosive, and for safety precautions; and $400,000 for drilling placement holes for the explosive.
- Net savings, therefore, would be over $26-million.

But in order to gain such savings, oil men will have to cope with some tricky new problems. Decontamination, for instance, will require new technology.

In an oil-storage application, a nuclear explosion will very likely leave a considerable amount of residual radiation.

And it will not be practical to wait until the cavity is made safe from radiation by natural decay processes.

So the cavern-makers will have to handle the decontamination themselves. Carlson suggested three alternative methods: (1) a thorough flushing of the cavity with water under high pressure; (2) a mechanical filtering system for removal of contaminated particles from the oil after it's removed from storage; or (3) decontamination of the stored oil at the refinery.

"The important fact," Carlson said, "is that residual radiation appears to be a problem for which solutions can be found."

Some types of rock will present special problems when used to house nuclear explosions.

Because some amount of collapse in the cavern ceiling is inevitable after a nuclear explosion, "attention must be paid to the size of the rock fragments which will fall back into the cavity," Carlson said.

"If the fragments are large, oil storage would be possible without removal of the rock. If, on the other hand, the fragments are small, capillary action and surface tension would make difficult or impossible the recovery of a large portion of stored oil, and rock removal would be required."

On another front, recovery of shale oil after a nuclear explosion will probably require that oil men carry out successful in-place combustion operations.

Oil companies and the government have not yet been able to set up a cooperative project for such a nuclear blast—mainly because of the industry's go-slow attitude (PW—Jan.2'59,p10).

But the Bureau of Mines and the Atomic Energy Commission are cooperating in research to explore the feasibility and safety of such an explosion.

Walter I. R. Murphy, of the Bureau of Mines' Laramie (Wyo.) petroleum research center, warned that there may be too much attention given to the nuclear blasting of shale oil, and not enough to the recovery processes for such oil.

"Much publicity," Murphy pointed out, "has been given to the nuclear phase of the proposed Plowshare experiment in oil shale. But many are unaware that there is another part to this project, that of studying methods for producing oil by in-situ combustion of the broken shale after the explosion.

"The second is the most important part, from the standpoint of practical application.

The shale oil in-situ recovery may be carried out in much the same way as current petroleum in-situ recovery projects.

Bureau of Mines comparisons between properties of Green River (Colo.) oil shale and petroleum, Murphy reported, "indicate that it may be practical to recover shale oil by an in-situ combustion process."

In shale oil recovery, he said, "the oil-displacement mechanisms that will operate are essentially those that operate in petroleum recovery projects.

"Of these, the condensing steam drive will probably be less important than it is in petroleum recovery. . . Conversely, a miscible drive may be more important in the shale project because of the light hydrocarbons formed in the organic-conversion process. . .

"It appears that a five-spot well pattern consisting of a central air-injection well and four production wells, equally spaced on a circle . . . might be a satisfactory system for starting the recovery project."

But the recovery project, too, will have its special problems.

Solutions will have to be found to problems of corrosion and erosion of equipment, and of contamination of products. And operators will have to guard against the presence of dangerous hydrogen cyanide and hydrogen sulfide in the production gases.

Texaco Joins Oil's Rocket-Fuel Makers

Oil's stake in the future of high-energy fuels as rocket propellants expanded this week as Texaco Inc. jumped into the synthetic fuels business.

Texaco joins a healthy number of oil companies—including Gulf Oil Corp., Standard Oil Co. (Ind.), Phillips Petroleum Co., and Esso Research & Engineering Co.—who are already in the synthetic fuels business (PW—Apr.25'58,p26).

Texaco is getting into high-energy fuels by acquiring Experiment, Inc., of Richmond, Va.

By buying Experiment, Inc., Texaco is entering the high-energy fuels field in much the same way as other oil companies—by absorbing a smaller firm which has piled up experience in the field.

Experiment, Inc., developed the first solid-fuel ramjet engine, and invented the monopropellant ram and turbo-rocket engine powered by acetylenic fuels.

Augustus C. Long, Texaco's chairman, says the acquisition of Experiment provides Texaco with "a new and important research arm in the increasingly vital areas of high-energy missile and aircraft fuels, advanced propulsion systems, and related chemical development fields."

Despite new praise last week for liquid high-energy fuels, oil companies in the synthetic fuels business still see high-energy solids doing most of the fueling in future rocketry.

Oil companies have held this position for some time. Standard of Indiana, for instance, is now working on the Air Force's Minuteman missile, the first all-solid-fuel intercontinental ballistic missile.

But last week the Air Force raised a few eyebrows when it volunteered new praise for high-energy liquids as rocket fuels.

Lt. Gen. Bernard A. Schriever, head of the Air Research & Development Command, described liquid hydrogen as "an ultimate chemical fuel," pointing out that it is almost three times as powerful as present rocket propellants.

Said Schriever: "The use of liquid-hydrogen high-energy rocket engines will provide substantial payload increases in upper stages of missiles and space vehicles.

"These applications, along with use in nuclear rockets, signify missile capabilities beyond the horizons of pre-liquid-hydrogen technology."

Although some took such statements to mean that liquid high-energy fuels had won out over solid high-energy fuels, oil companies involved in work on solids are not alarmed.

Dr. John P. Longwell, who heads up research on solid rocket fuels for Esso Research, told PETROLEUM WEEK:

"Knowledge of the known chemical elements and their known combinations indicates that the most efficient chemical propellants are liquefied gases, such as liquid hydrogen, liquid flourine, and liquid ozone. . .

"Looking into the future, it is expected that liquid-propellant engines will improve in this respect, but that solid-propellant engines will retain an advantage. The importance of this advantage is not expected to diminish with time."

The reasons for the bright outlook for solids as rocket fuels are varied, but they add up to this: It's much easier to store and handle solids under field conditions.

Dr. Longwell compares liquid- and solid-fuel rocketry this way:

Liquid fuels "require storage at very low temperatures, and the time-consuming difficulties in handling them seems to rule them out for military applications when a state of instant readiness is necessary."

In addition, Dr. Longwell says, "Solid-propellant engines have the advantage in respect to compactness and reliability."

Another oil company now in the solid fuels business makes this prediction: Because of their storage and handling disadvantages, liquid rocket fuels will be used in launching space research vehicles under highly-controlled experimental conditions, while solid fuels will be used for most military rocketry.

Congress to Start Tax Study in Fall

A congressional study of the full federal tax structure—including percentage depletion—is now scheduled to start next November.

The date was set this week by Chairman Wilbur D. Mills (D., Ark.) of the House Ways & Means Committee.

Mills said a tax reform should seek to achieve a tax climate "more favorable to economic growth."

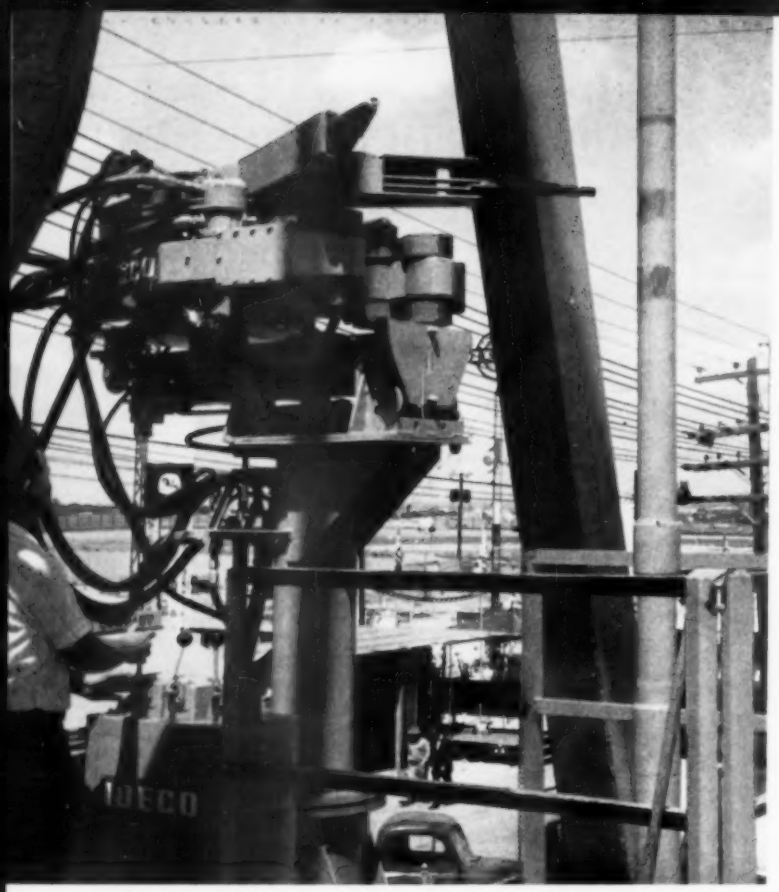
Present estimates are that the study will not result in a cut in the existing 27½% depletion provision for oil and gas producers.

One reason is that Mills and other House and Senate leaders, as well as President Eisenhower, are opposed.

Also, the Treasury Dept., at Ways & Means Committee hearings this spring, offered as its philosophy on percentage depletion a strong stand recommending for resources that are "scarce or in the national need" a higher percentage depletion rate than would be necessary just for the recovery of capital.

David A. Lindsay, assistant to the Secretary of the Treasury, told the committee that percentage depletion should provide "incentives for exploration necessary for replenishment of a wasting asset by the discovery and development of additional deposits." He added:

"A sound national policy must, of necessity, provide for the development and replenishment of all our vital resources . . . at a rate that will, on the average, exceed the rate of domestic demand."



NEW SPINNER-STABBER, unveiled by Ideco at Tulsa oil show last week, replaces chains and crew muscle in spinning drill pipe and making connection.

AUTOMATIC ELEVATORS of Ideco reduce crew danger and fatigue in running drill pipe.

Automation Will Grow in the Oilfields

The trend to more automation and simpler equipment was striking at the record-breaking Tulsa oil show this week.

Over the past ten days, some 500,000 persons, including 30,000 users, buyers, and specifiers of oil equipment, have viewed the $500-million worth of oil equipment displayed by some 1,800 firms.

When the gates close Saturday, the International Petroleum Exposition will have been the biggest single-industry exhibit ever held, by any measurement—physical size, attendance, or value of exhibits (PW—May15'59, p31).

A long step toward the elimination of crew fatigue and danger in running drill pipe was taken at Tulsa with the introduction of automatic dual elevators and a new spinner-stabber. They were shown in operation by Ideco, Inc., one of the Dresser Industries (pictures, above).

The automatic elevators, an improvement over the slower manual types used for deep drilling recently, eliminate the need for slips in making connections going in or coming out of the hole. The system lessens the tendency to score, bend, or bottleneck drill pipe. In addition, the dual elevators provide greater speed and efficiency in handling long strings, and they lessen crew drudgery and fatigue.

The automatic spinner-stabber acts to centralize the pin over the box when drill pipe is being run, and also replaces the chain normally used to spin the pipe and make the connection.

In addition to eliminating sore shoulders, resulting when floormen position the drillstem for connections, the spinner-stabber does away with one of the main causes of severed fingers during pipe-running operations.

Attention was also focused on the need for new technological advances as drilling deepens.

The need for such heavy-duty equipment was underscored last week with the announcement by Hughes Tool Co. that it is modifying its laboratory rig in Houston to test 200,000 lb. weight on the drill bit, roughly double that in any field operations today.

Another sign of the times was Reynolds Metals Co.'s announcement that it will deliver aluminum drill pipe to four major oil companies for field tests.

Compactness and simplicity in new oilfield power systems were stressed at the exposition. Introducing a simplified diesel-electric system for medium-depth drilling and workover rigs was Electro-Motive Division of General Motors. The electric transmission and control equipment are adaptable to natural gas engines.

Low weight per horsepower, compact size, and mobility are the features of the new V-Type engines of GM's Detroit Diesel Engine Division. Ranging from 20 hp. to 1,650 hp., the expanded line is designed for all oil field equipment.

Cameron Iron Works is showing a new type of blowout-preventer body construction. It is made of a multiplicity of forgings welded together to form a single unit. The advantages are savings in height, weight, and flange connections.

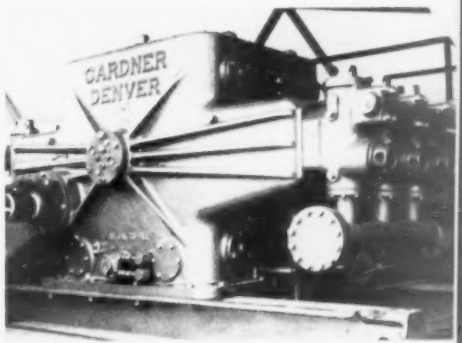
New concepts in pumping and wellhead equipment were introduced at Tulsa. Parkersburg Rig & Reel Co. re-

TRIPLE-ZONE completion is handled by Johnston hydraulic pump of Engineered Oil Tools. It can also work four zones.

ALL-ELECTRIC experimental pump of Parkersburg Rig & Reel Co. features reduced weight and unlimited stroke strength.

POXYGLAS TANK of Black, Sivalls & Bryson fights corrosion with a continuously-wound glass-filament construction.

"TRUE MASS" FLOWMETER shown at Tulsa by Black, Sivalls & Bryson measures flow of gas directly in pounds, despite many variables of pressure, temperature, and density.



650-HP. PUMP of Gardner-Denver is designed for many jobs around the rig.

vealed an experimental electric pump (picture), designed for use in areas where weight and size are limiting factors.

In operation, a ball-bearing nut similar to the steering gear on an automobile is activated by a small electric motor through a bevel gear arrangement. The gear, as it turns, forces a screw to ascend, pulling the polished rod to the top of its stroke.

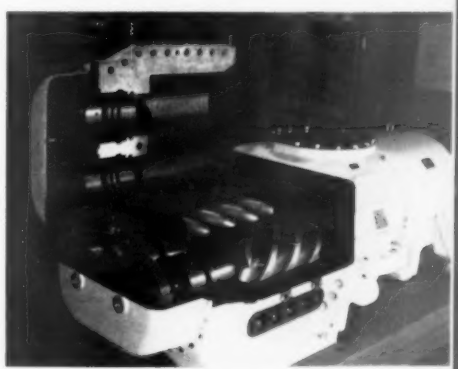
A new Johnston triple-string pumping unit (picture) pumps each of three zones independently and at different speeds. The hydraulic unit, exhibited by Engineered Oil Tools, is also available for dual or quadruple completions.

A new-type Christmas tree was shown by Grove Valve & Regulator Co. Designed for use on both oil and gas wells of all pressures and depths, the tree combines all major wellhead components in a single unit. Both wing and master valves are included as integral parts of the unit.

A "true mass" flowmeter—one that directly measures gas flow in pounds—was displayed at the show (picture).

Developed by Black, Sivalls & Bryson and General Electric, the flowmeter uses a small gyroscope that "automatically totalizes flow in a novel manner."

The low-maintenance device measures the weight of gas with high accuracy over wide ranges of flow rate, pressure, temperature, and density.



AXIAL COMPRESSOR introduced by Fairbanks-Morse has application in refineries, petrochemical plants, and pipelining.

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What's New / IN THE INDUSTRY

New Mexico's crude allowable for June has been reduced 599 b/d to 355,971 b/d. The normal unit allowable for southeast New Mexico remains unchanged at 36 b/d; total estimated allowable for the section is down 1,886 b/d to 300,328 b/d. For the northwest section, the unit allowable is also unchanged, at 54 b/d; total estimated allowable is up 1,287 b/d to 47,643 b/d. The state Conservation Commission also ordered an 8,000 b/d supplemental allowable and deferred action on requests for a 91,006-bbl. back allowable resulting from Gulf Oil Corp.'s recent proration in the state.

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Louisiana will retain its present depth bracket oil allowable through June, according to Ashton J. Mouton, state conservation commissioner. The allowable has been based on 34% of the March, 1953, formula since October.

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Texas' Gov. Price Daniel now wants a 5% "severance beneficiary" tax on natural gas. His request for a 3% tax was turned down this spring by the legislature. His new request came at the opening of a special legislative session this week where he also recommended reducing the present gas production tax from 7% to 5% of wellhead value.

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The National Labor Relations Board will hear a plea on May 27 for a representation election at Esso Standard's Baton Rouge plant. The Independent Industrial Workers, which held off a Teamsters Union bid recently, is being challenged by the AFL-CIO Metal Trades Council.

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Merger talks between the Oil, Chemical & Atomic Workers and the International Chemical Workers have ended in a stalemate. Committees of the two unions, after a meeting in Chicago last week, said talks to resolve "differences of opinion" would be held during the next ten months.

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The Lummus Co. will advance Petroleos Mexicanos $7,560,000 in credits. Pemex plans an anhydrous ammonia plant and a catalytic gasoline unit.

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An antitrust suit against Sinclair's now abandoned plans to acquire Texas Pacific Coal & Oil may be settled out of court. Judge Jack Langdon, of the Ft. Worth District Court, suggested the action to the Texas attorney general.

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New emphasis on automation will greatly increase the oil industry's efficiency in the next few years, according to a National Planning Assn. report. That's described as the primary result of greater use of automation as a management tool for over-all planning and production.

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The American Petroleum Institute is considering expansion of its production division staff to expedite vocational training. Action on a proposal to add an organizer and an instructor will be taken at API's training conference in Denver, June 8-9.

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
May 22, 1959

The House antitrust subcommittee is about to release its long-awaited report on oil pipelines. The report is the aftermath of hearings in 1957 on enforcement of consent decrees between the Justice Dept. and businesses. Part of the investigation covered activities of more than 50 shipper-owned oil pipelines.

The report is expected to be critical of the Interstate Commerce Commission's regulatory practices. The subcommittee majority, headed by Chairman Emanuel Celler (D., N.Y.), disagrees sharply with some ICC methods, particularly the factors used to determine the rate of return the shipper-owners receive on their pipeline investments. Another complaint may be that ICC is too generous in allowing a broad base for evaluation.

The subcommittee may hit at the 7% return allowed shipper-owners as too high. The percentage was agreed upon in a 1941 consent decree between the Justice Dept. and the pipeline owners. Celler, however, thinks company returns are "exorbitant."

But there likely will be a minority report, too. The committee probably will divide about along party lines, with Democratic members siding with Celler on the majority report and Republican members issuing a separate report for the minority.

"Divorcement" of ownership is not being considered in the report. Although some committee members believe pipeline owners should not also be shippers, the 1957 hearings did not touch on separation of ownership, and the report is not expected to broach this controversy directly.

•

Watch for new allocations under the oil import program. The Oil Import Administration's deadline for applications fell last weekend, and all but about 11 eligible companies applied. The remaining few were believed to be in the mail and probably will be accepted. Some ineligible applications are being received, and these will be turned down. The import office now is trying to determine individual allocations, and these probably will be announced in June for the July 1-Dec. 31 period.

•

The White House is readying a plan to ease unfinished oil restrictions on the West Coast. The Administration is heeding several complaints against the import program's requirement that unfinished imports be restricted to 10% of the total crude-and-unfinished allocation. The proposed change may keep total unfinished imports to a level of 10% of crude, but allow individual companies to exceed the percentage. Such a switch will come in another White House proclamation.

•

There is pressure on the government to increase the allowable level of residual fuel oil imports. Companies are fearful that the present residual level, if not boosted in the next six months, would cause a possible logjam. Importers would like to get the fuel now, store it for the winter months. The President's first proclamation on imports gave the Secretary of the Interior authority to raise or lower the residual imports level each month, if necessary. The secretary passed on the discretionary authority to Imports Administrator Carson.

New Pay Lifts Northwest Oklahoma Play

Hunton (Devonian) lime gas discoveries at two widely-separated locations in northwest Oklahoma have led operators to take a new view of production possibilities in the area.

For the past several years, wells in the northwest Oklahoma sector of the Anadarko Basin have been viewed primarily as Pennsylvanian prospects, although good Mississippian and Ordovician pools have been uncovered in some localities.

Speculation now is that with Hunton added to the list of pay prospects, stepped-up drilling programs will be the order of the day.

It also is probable that projected depths will increase right along with the activity, with bottoms of 15,000 ft. and below being reached in an increasing number of tests.

Magnolia Petroleum Co. already has started an apparently extensive evaluation drilling program to prove out the new Hunton play it kicked off last month in northern Custer County (PW—Apr.10'59,p29).

It's discovery, the No. 1 Miller, section 22-15n-16w, is being pegged by some oil men as Oklahoma's most significant discovery in five years. The strike gauged 95-million cf/d of gas on open flow test.

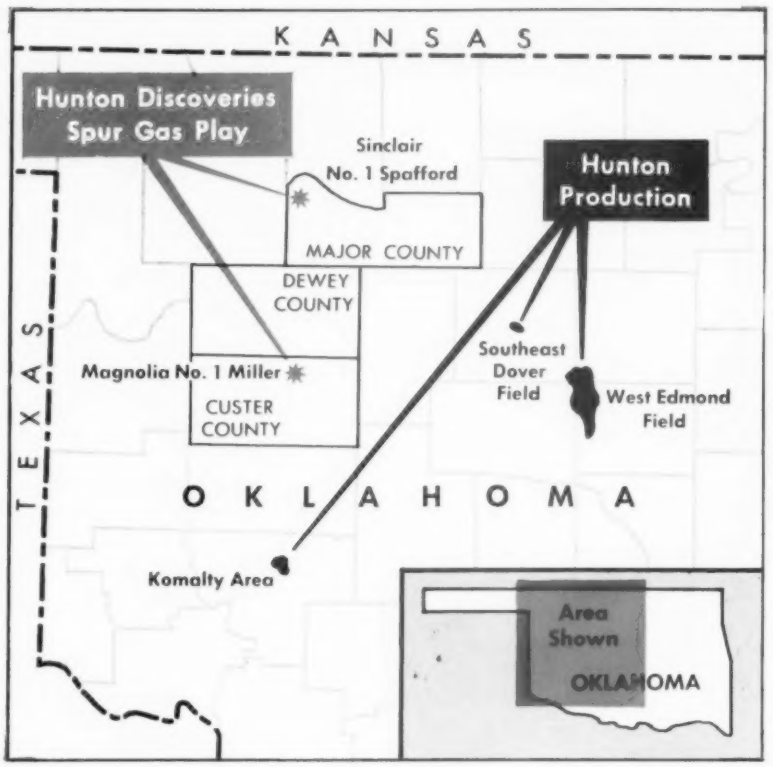
Magnolia last week was drilling below 3,000 ft. at its No. 1 Carter, a direct north offset to the discovery, and was rigging up rotary tools for its No. 1 Herring, a Dewey County offset 6 mi. north of the Miller. Both efforts are scheduled to 15,000 ft.

Just two months before Magnolia's deep Hunton strike, Sinclair Oil & Gas Co. opened the first known Hunton reservoir in northwest Oklahoma, 45 mi. north in Major County (PW—Feb.20'59,p50).

The No. 1 Spafford—discovery for Sinclair's West Campbell pool—flowed 5,571,000 cf/d of gas through 24/64-in. choke, plus an estimated 53 b/d of condensate. The well was shut in for lack of a market.

Engineering estimates—said to be on the conservative side—place reserves underlying the Magnolia strike at from 60-billion to 100-billion cu. ft. of gas per 640-acre unit.

Using this reserve figure, and a very conservative gas price of 10¢ per Mcf., each well should produce from $6-million to $10-million worth of gas. And some geologists believe that the structure may encompass nearly 100 productive locations.



While these figures are necessarily speculative, considerable substantiation is given by the excellent porosity logged in the discovery well.

In the upper zone (Bois d'Arc), porosity ranged to as high as 14%, while in the lower section (Chimney Hill), it was as high as 11%. Only light acid treatment was required to achieve production.

Geologically, about the only thing to correlate the two discoveries is the fact that both produce from limestones of the Hunton group.

The Miller well, drilled on the basis of seismic interpretation, is believed to be on one of the large structurally high areas in the Anadarko Basin.

Sinclair's find, on the other hand, appears presently to be producing from a stratigraphic reservoir.

The Magnolia well is almost twice as deep as the Sinclair discovery—although its surface elevation is only 312 ft. high.

Magnolia perforated both upper and lower sections of the Hunton at 14,383-472 ft. and 14,773-818 ft. to establish the second-deepest Devonian production in North America. (The Bell Lake pool of southern Lea County, N. M., produces from Devonian topped around 14,900 ft.)

By comparison, the Sinclair discovery is relatively shallow. It was completed through Hunton perforations at 8,271-358 ft.

No major faults are known to exist between the two wells.

Both wells are isolated from comparable production found elsewhere in the state.

At the time of its completion, Sinclair's Spafford strike was over 60 mi. northwest of nearest comparable pay in Southeast Dover field of Kingfisher County. West Edmond field, which lies along the buried Nemaha Arch and is the biggest Hunton field in the world, is some 80 mi. southeast.

West Edmond is almost 70 mi. due east of Magnolia's discovery. And the shallow Komalty area, with Hunton production from around 500 ft., lies about 45 mi. south.

Also significant is the fact that the No. 1 Miller marked the first commercial production of any kind in Custer County.

Because it is faced with expiration dates on many of the leases sur-

rounding its Custer County discovery, Magnolia is going ahead with renewals and is expected to drill additional tests in short order.

The company recently recorded new lease contracts covering ten sections in township 16n-16w, and has similarly revised and enlarged its position in 14n-16w and 15n-16w.

If some 60,000 acres should prove productive, as anticipated, Magnolia would be in a strong position with its approximately 35,000 acres.

Open spread patterns of protection around the discovery, much of which is believed favorably situated on structure, are held by Sinclair, Gulf, Texaco, Cities Service, Atlantic, and Placid Oil Co. Smaller tracts are held by Kerr-McGee, Lone Star, Pan American, and British-American.

Magnolia has long been interested in the specific area around its discovery, and previously drilled two dry exploratory ventures to about 12,000 ft.

In late 1953 and early 1954, a big Springer (Pennsylvanian) sand play developed to the east, in Grady and Caddo Counties. It was the attractiveness of this formation that drew Magnolia to the Custer County location. (Seismic data had been obtained in the general area since about 1950 by Carter, Ohio Oil, Magnolia, and Texaco.)

Magnolia's first effort at production was No. 1 Floyd Jones, section 21-15n-16w, just southwest of the No. 1 Miller. This test went to 12,006 ft. before landing casing on bottom for tests of shows around 11,600 ft. The hole was abandoned, subsequently reworked in the upper Pennsylvanian sands, and then plugged for a second time in mid-1956.

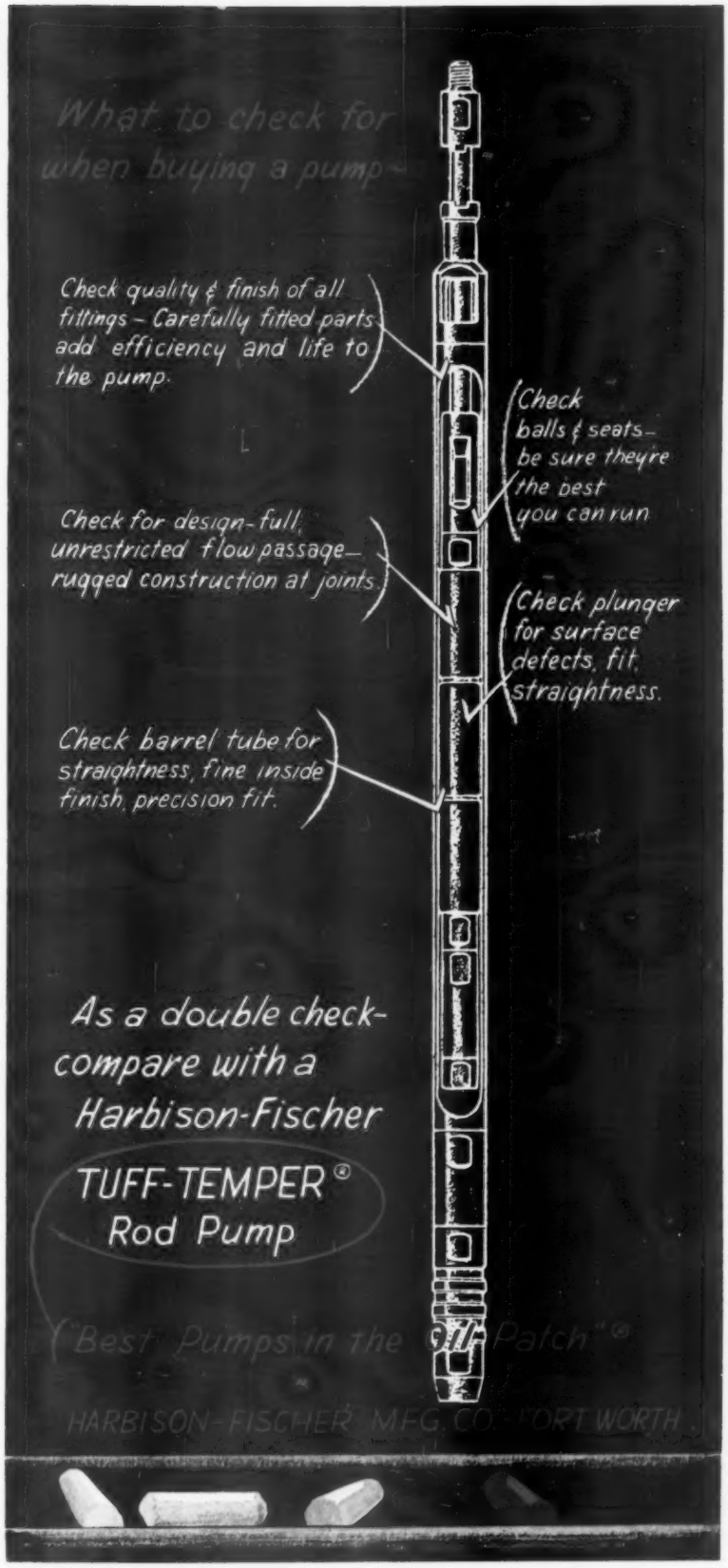
Late in 1954, Magnolia drilled its No. 1 W. W. Jones, section 24-15n-16w. The hole bottomed at 11,672 ft. and pipe was run for production tests prior to abandonment.

Ironically, the Magnolia Miller was drilled just ¼ mi. north of Parker Drilling Co.'s No. 1 Miller, the first deep test put down in the area. Parker's effort finally was abandoned at 11,973 ft. after pipe was set for tests of promising gas shows in Pennsylvanian sands, which proved noncommercial.

The Magnolia Miller likewise made gas flows in excess of 1-million cf/d of gas from the Morrow (Pennsylvanian) sand at 11,462-82 ft. and 11,510-70 ft. Both sections now are cased off.

Sinclair has not progressed as far as Magnolia with its development program.

Although no offset locations have


What to check for when buying a pump
Check quality & finish of all fittings – Carefully fitted parts add efficiency and life to the pump.
Check balls & seats – be sure they're the best you can run
Check for design-full, unrestricted flow passage – rugged construction at joints.
Check plunger for surface defects, fit, straightness.
Check barrel tube for straightness, fine inside finish, precision fit.
As a double check – compare with a Harbison-Fischer
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yet been announced, informed sources indicate that deals are being turned, and that development work likely will begin within a few weeks.

Sinclair also is in a good position to follow up on the play it started. The discovery was drilled on a Sinclair-held lease block that includes more than 5,000 acres. The company reportedly also has picked up additional acreage in the area.

The mere fact that the Sinclair discovery was completed as a shut-in well tends to strengthen the argument for early development.

Obviously, no pipeline will be laid into the area until more is known of the reserve picture. Development drilling holds the key.

Additionally, the lesser depths encountered around the Sinclair well, and the attendant lower drilling costs, may encourage drilling by independents, whereas the 15,000-ft. requirements in the deeper parts of the basin may not.

Is a New Kansas Play in the Making?

The recently-completed first producer for Riley County, Kan., has stimulated interest in the long-dormant Nemaha Uplift.

Cities Service Oil Co. No. 1 Yeage, section 25-11s-8e, was completed on the pump for 47 b/d of oil through perforations in the Hunton lime at 1,682-1,693 ft.

The No. 1 Yeage is located on the west side of the uplift, as are the El Dorado and Augusta fields to the south, in addition to some fields still farther south in Oklahoma.

The uplift is a post-Mississippian development, thrusting a ridge at almost right angles across a pre-Mississippian general complex of uplifts which run northwest to southeast.

It is generally recognized as running from Omaha, Neb., southwest across Kansas to near Oklahoma City. And some geologists say the uplift may even go farther, to end near Pauls Valley, Okla.

"It's hard to realize," says Earl Brandt, district geologist for Cities Service, "that such an obvious feature as the Nemaha Uplift lay so relatively unexplored for 40 years."

Brandt notes that El Dorado field, 80 mi. southeast of No. 1 Yeage, in Butler County, has long been the best producing field in the state.

It has many pay zones, ranging from the Admire at 630 ft. down through the Lansing-Kansas City, Viola, Simpson, and Wilcox, to the Arbuckle at around 2,550 ft.

Brandt explains the geology of the No. 1 Yeage as a pinchout or trap against the granite of the uplift, in Hunton lime, over which lies a hard, cherty Pennsylvanian conglomerate.

He and others believe the area around the new well has production possibilities in the deeper Viola, Simpson, and possibly the Arbuckle, the oldest sedimentary rock in the area.

The discovery could provide the impetus that would tie the Nemaha Uplift to the Forest City Basin on the east, and the Salina Basin on the west, says a Carter Oil Co. spokesman.

Carter has been strong in developing the Forest City Basin, with projects at Davis Ranch pool in Wabaunsee County, and John Creek field in Morris County.

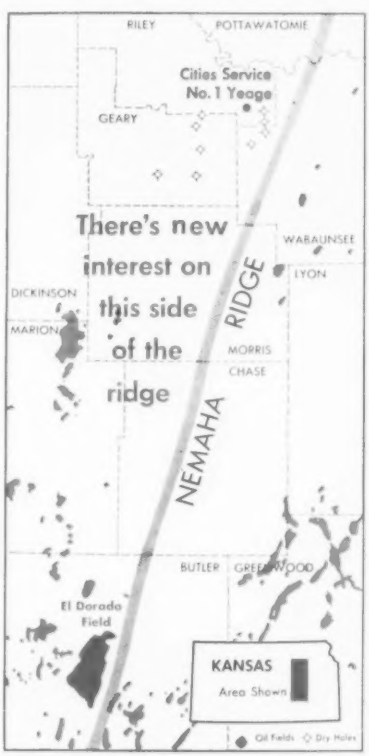
The White & Ellis Drilling Co. geologist says there is an excellent chance for Vila pay (found in Forest City Basin), and a fair chance for Simpson and Arbuckle, along the flanks of the uplift.

He and other geologists familiar with the area say the best chances west of the uplift are in pinchouts or stratigraphic traps, either related to structure or as porosity traps.

A few cable tool rigs working in the area west of the uplift have found Viola and Simpson shows.

But as yet, the general area west of the Nemaha Uplift has been very sparsely drilled.

At present, there is less than one hole per township on the average throughout the northeast part of the state, including this area.



Geary and Pottawatomie Counties, which border Riley County on the south and north, respectively, have no production. Clay County, to the west, has one small field.

The closest and most recent work done near No. 1 Yeage was conducted by Tom Palmer, Wichita independent, who drilled three dry holes just southeast of the discovery. One of the tries is just ¼ mi. from the producer.

And just south and southwest, in a fairly close radius, 6 more dry holes have been drilled.

Leasing in this area, however, is moving at a steady clip, with about 750,000 acres having been leased since the first of the year.

One oil scout working in the area estimates that since Jan. 1, 400,000 acres have been leased in the Salina Basin to the west, about 100,000 acres in Forest City Basin to the east, and approximately 250,000 acres along the uplift.

Companies and individuals along the uplift, and their lease holdings, include: Cities Service, about 20,000 acres; Pure Oil, 14,000 acres; Magnolia Petroleum, 40,000 acres; Carter Oil, 7,500 acres; George Johnson, Jr., 18,000 acres; F. G. Holl, 4,000 acres; and E. K. Carey, 6,000 acres.

Gulf Oil, Continental, Shell, and Sinclair also have acreage along the uplift.

Some of the leases are reportedly selling for as much as $12.50 per acre.

The play, however, is not as vigorous as the one that swept the northwest part of the state last year.

Last year, Phillips No. 1 Llanos in Sherman County found production in five levels in three horizons to touch off a big lease play (PW—May23'58, p22).

The current lease play in the Riley County area does not involve such large-scale blocks. And, too, the No. 1 Yeage is not a multipay discovery as was the Phillips No. 1 Llanos.

Delaware Hunt Moves Into New Mexico

Shallow drilling in the Delaware Basin—a Texas exploration hotspot during the last two years—is spreading into New Mexico.

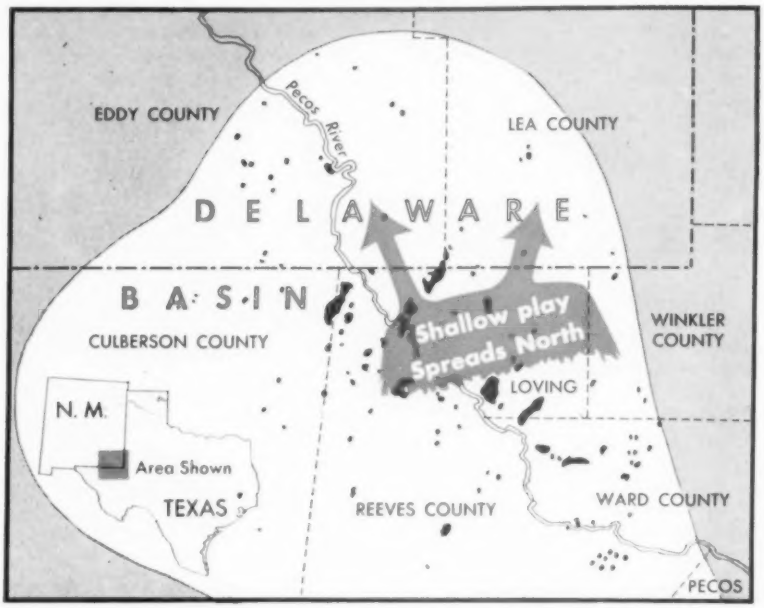
The basin, which covers an area of about 100x150 mi., laps over into New Mexico to include portions of Lea and Eddy Counties (map).

On the Texas side, it covers all of Loving County, almost all of Reeves County, and portions of Pecos, Ward, Winkler, and Culberson Counties.

At last report, there were 34 rigs working in the basin, 12 of which were drilling on the New Mexico side. Lea County has five and Eddy County has seven.

Loving County leads the Texas side with seven, followed by Culberson with five, Ward with four, and Winkler with one. Pecos is the only county in the basin with no significant Delaware drilling.

For the past two years, nearly all of the drilling play has been on the Texas side, near the state line.



Discoveries and subsequent leasing have drawn the play into New Mexico.

An example of this is the Hill & Meeker and F. W. Holbrook No. 1 Wendell Trower, which was completed in January to open up the El Mar (Delaware) field in Loving County, just south of the state line. The well came in flowing 109 b/d of 44.8-gravity oil through perforations at 4,452-47 ft.

El Mar field now has approximately half a dozen producers and extends almost 3 mi. across the state line into Lea County.

Two small discoveries have just been completed in Eddy County, and other wildcat prospects are being tested or drilled.

Ford Chapman & Associates No. 1-34 State, section 34-26s-28e, was completed as a Delaware discovery for 22 b/d of oil on the pump and 21 b/d of water through perforations at 2,512-14 ft.

The discovery is 6 mi. northwest of production in Ford field.

In eastern Eddy County, on the north edge of the basin, about 20 mi. from the state line, Shell Oil Co. and Texas Crude Oil Co. No. 1-25 Big Eddy Unit was completed on the pump as a Delaware discovery for 38 b/d of 25.5-gravity crude and 6 b/d of water.

The well was plugged back from a total depth of 7,605 ft. to 2,551 ft. It is in section 25-20s-31e.

Approximately 5 mi. west of this completion, a deeper field opener has been indicated by Shell and Texas Crude's No. 1-30 Big Eddy Unit.

Operators have run logs to total depth of 7,365 ft. in the Bone Springs formation after oil- and gas-cut mud was recovered in drillstem tests between 6,509-58 ft. The hole is in section 30-20s-32e.

The latter two tests form the northernmost edge of the Delaware Basin play.

Three other tests in Eddy County—all having oil shows—add emphasis to the northward spread of the play.

J. Glenn Bennett No. 1 Brunson, section 6-26s-30e, reportedly flowed 95% water and 5% oil through perforations at 3,419-24 ft.

Union Oil Co. of California No. 1-9B H. A. Crawford, section 9-24s-37e, 4 mi. east of Black River field, has been plugged back after being drilled to 12,370 ft., and has indicated production in tests of the top of the Delaware, around 2,170 ft.

Texaco Inc. No. 1-Heflin-Federal, section 24-24s-31e, 8 mi. northwest of Jennings field, has been bottomed at 8,059 ft. in the Deeper Bone Springs after encountering oil shows on three separate drillstem tests. At last report, operator was preparing to reperforate and test higher in the Bone Springs.

Two recent Lea County discoveries have indicated somewhat stronger Delaware production than the Eddy County completions.

Hill & Meeker No. 1-36 State, section 36-26s-32e, 6 mi. southwest of Jennings field and 5 mi. northeast of North Mason field was completed as a Delaware discovery, flowing 192 b/d of 41-gravity oil and no water through perforations at 4,609-19 ft.

The same operators' No. 1 Gulf-State, a northeast offset to the 1-36, was completed to flow 62 b/d of oil plus 17 b/d of water through perforations at 4,697-753 ft.

Delaware sand production is regarded by operators as being particularly attractive.

Less drilling capital is required, since the pay is at relatively shallow depths.

And, say operators, the crude requires less refining, since it already is sweet, and usually commands a price of about $3 per bbl., less trucking charges.

Although most of the play in the past has been on the Texas side of the basin, Delaware production is not new to New Mexico.

Poker Lake and North Mason fields in Eddy County are currently on production, while the older Jennings field in Lea County has seen better days.

But, for all its promise, the Delaware sand poses difficult problems in well completions.

"Despite the attractiveness of Delaware sand exploration," says one operator, "drilling in the area is still tricky because of the thin pay sands and the underlying water.

"The trick is to penetrate the sand just enough to get the oil, but not far enough to let the water spoil a potentially good well."

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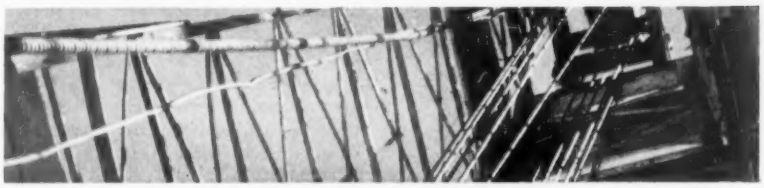

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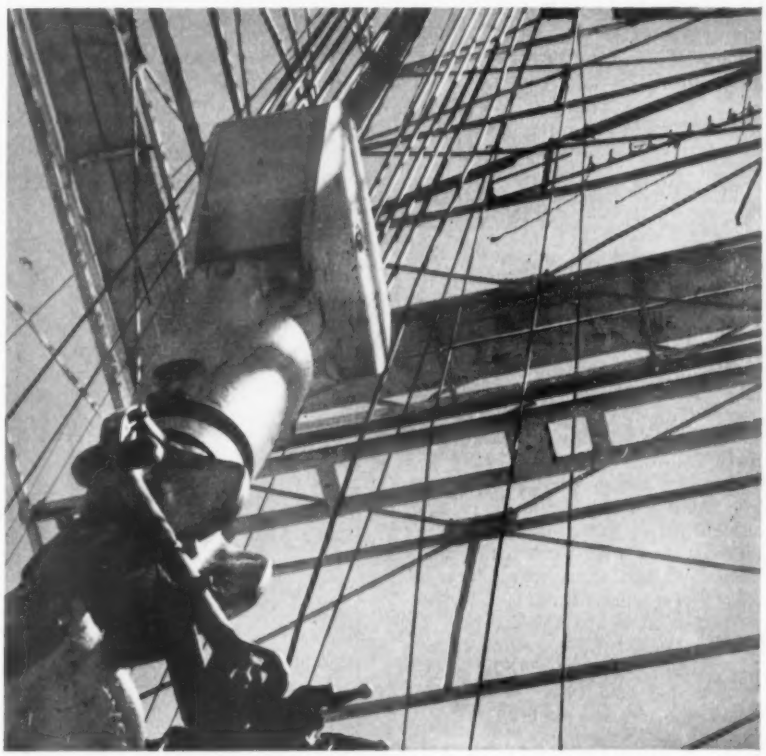

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New Type Drilling Tool Now on Market

The new rotary-percussion drill just introduced by Pan American Petroleum Corp. has several significant differences from other such tools.

Pan Am's new tool, for instance, operates with air or gas, and has only one moving part.

Gulf Oil Corp.'s rotary-percussion drilling tool, announced in June, 1957, is powered by mud (PW—Jun.7'57, p12). In Gulf's drill, too, the valve, hammer, and anvil move; in Pan Am's, only the hammer moves.

Gardner-Denver Co.'s "Mole-Dril" operates with air, but there are considerable variations in the types and arrangements of components in this tool, which is used for core and shothole drilling (PW—Dec.6'57,p24).

In principle, however, all of the tools are similar, in that drilling is accomplished by a motion that incorporates both the turning of a rotary drill and the percussion of a cable tool.

All of the rotary-percussion drilling tools developed to date, however, are said to boost penetration rates. Pan Am also claims longer bit life for its tool.

A commercial production model of Pan Am's tool, developed at the company's Tulsa research center, has been used in two wells in Elk Basin field, Park County, Wyo.

Pan Am says penetration rates ranging from two to five times the rates established by conventional rotary air drilling, and with up to four times longer bit life, were achieved by the new tool on these tests.

Test models built at the Pan Am research center have performed successfully in seven other wells, in Wyoming, Canada, New Mexico, and Utah, the company reports.

The tool itself is simple. It consists of a short tubular case containing a hammer—the only movable part—an arrangement of stationary valves, and an anvil. Operation also is simple.

While the hammer is the only part designed to move, the anvil "gives" a few thousandths of an inch each time it is struck by the hammer.

As the bit rotates on bottom, gas or compressed air—pumped down the drillstem as the circulating medium—passes through a stationary valving arrangement which lifts the hammer and then drives it down on the anvil with considerable force.

A high-frequency hammering action results. This hammering action transmits energy through the anvil and the bit to the formation being drilled. The combination of pounding and normal rotary action serves to speed up penetration rates.

Conventional bits used with the percussion tool have, "without exception," outlasted bits used in conventional drilling methods, Pan Am says.

Penetration rates in excess of 100 ft. per hour have been achieved where adequate weight on the bit could be used, says the company.

The results are from comparative tests in which both rotary-percussion and conventional rotary systems were used alternately in the same wells.

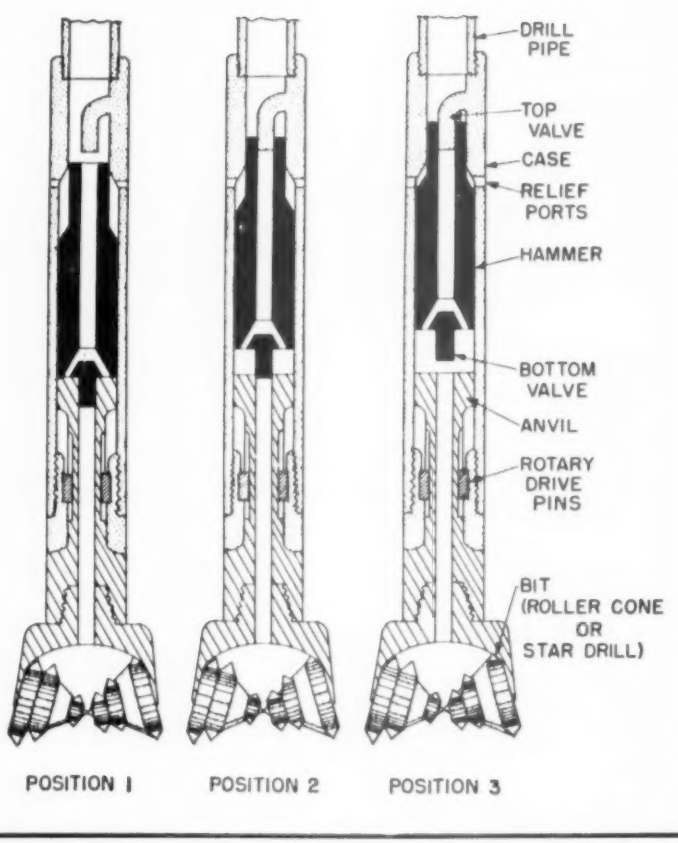
In the most recent test of the tool—in Wyoming's Elk Basin field—one rotary-percussion bit drilled 813 ft. of hole, compared with a typical footage of 212 for bits used with the conventional rotary-air method in this well.

The percussion tool bit teeth were still sharp and the bearings still good after 813 ft., while the bits used in conventional drilling were worn out after much shorter runs.

Penetration rates in the Elk Basin well were substantially higher with the percussion tool. With conventional air rotary, the average penetration rate was 12½ ft. per hour for 905 ft.; with the new tool it was 33 ft. per hour for 1,073 ft.

The same weight was used on the bits in both types of drilling in this series of tests, although it was less weight than would ordinarily be used,

How Pan Am's Rotary-Percussion Drilling Tool Works



ONE COMPLETE CYCLE of Pan Am's new rotary-percussion tool is shown in these schematic drawings. The tool, which is available in various sizes, is shown with the hammer fully down (left), half way up (center), and fully up, to demonstrate operation of the stationary valves. Only the hammer moves, though the anvil "gives" by a minute fraction under the pounding action. Standard roller cone bits are used with the drill.

because of steep-tilted formations that tended to deflect the hole from vertical.

The light weight, Pan Am says, accounted for the relatively low penetration rates achieved by the percussion tool in this well, as compared with those experienced in other tests at other locations.

In another test of the tool at a Canadian location, penetration rates as high as 162 ft. per hour were achieved.

This rate compared with rates not over 20 ft. per hour recorded by conventional rotary air drilling, according to Pan Am. In this well, the company says, the tool has recently performed satisfactorily at depths near 10,000 ft.

In the same area of Canada, a rig with conventional rotary drilling and mud circulation averaged only 4 ft. of hole per hour, Pan Am reports.

Pan Am says that, in terms of drilling rate, the rotary-percussion tool is "unmatched" by any other system now in use. There are other advantages, too, it says.

Penetration rates range from 3 to 12 times greater than that of a mud rotary, says Pan Am, and from 2 to 3 times greater than air-gas rotary.

The tool extends bit footage as much as four times over straight rotary, the company adds. Improved bit life is attributed by Pan Am researchers to the slower rotating speeds and lower weight on the bit which can be used in rotary-percussion drilling.

Standard roller cone bits are used, says Pan Am, although these require slight strengthening for percussion use. Bit manufacturers modified existing bits and provided these at no additional cost.

Pan Am's percussion drilling technique requires no additional compressors or special rig equipment.

A conventional air-gas rotary rig is "standard equipment" for the percussion tool.

The drilling crew follows exactly the same procedures in percussion drilling as it does in air-gas rotary drilling, with one minor exception: The drill pipe must be rotating on bottom or coming off bottom to avoid the possibility of sticking the bit in the hole.

The tool also has successfully handled foaming agents to combat water influx and widen the tool's area of use. In one well, water influx rates as high as 100 bbl. per hour were handled successfully.

On field tests to date, drilling has proceeded on a routine basis, with down time for repairs no greater than that experienced in normal air-gas rotary operations. Pan Am says this experience is due principally to the simplicity of the tool.

The new tool represents extensive modifications made by Pan Am researchers on a basic design originally developed by Bassinger Tool Co., of San Antonio, Texas, for blast-hole drilling.

The modifications introduced by Pan Am resulted in making the tool operational for oil- and gas-well drilling.

The tool is now being manufactured on a commercial basis by Mission Mfg. Co., of Houston, under licensing agreements with Pan Am and Bassinger.

Theoretical studies involving use of a digital computer solved many of the basic design problems, and mathematically "tested" and eliminated many possible design variations.

Experimental models were then built at the research center, and tested there and in pilot tests near Tulsa, before the tool actually was tried out at a full-scale field drilling location under normal operating conditions.

The new tool has been on display at the Mission exhibit at the International Petroleum Exposition in Tulsa.

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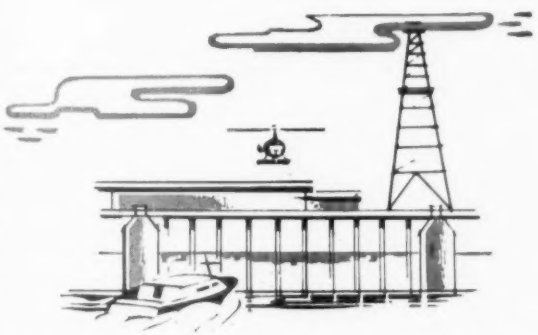

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

California Seeks Tax On Out-of-State Oil

Oil and gas going into California from other states may run into a 2% tax if a proposed bill passes the state legislature.

The tax on out-of-state oil and gas proposed in an amendment to an original bill calling for a 2% severance tax on California oil and gas.

It would be levied on all oil and gas except that produced in California, on which the severance tax would be paid instead.

The tax on out-of-state oil and gas would be imposed on the market value of the oil when it is processed in California, and levied on gas at the time it enters the local distribution system.

Under terms of the amendment, the oil and gas brought into California would not be given a higher value than the average wellhead value of similar oil and gas produced in the state.

Prior to this amendment, California producers had charged that the severance tax placed them at a competitive disadvantage with out-of-state producers.

•

Two New Quadruple Completions Planned

Two requests for quadruple completions in Southwest Texas have been filled with the Texas Railroad Commission.

In one of them, Humble Oil & Refining Co. requests permission to complete from four oil and gas reservoirs at its No. 11 King Ranch Alazan, in Kleburg County.

In the other, Phillips Petroleum Co. seeks approval to quadruply complete its No. 14 Copano, West Fulton Beach field area, Aransas County, from the D, E, G, & I horizons.

Sketches submitted by Phillips show that the well would produce from only two zones at a time, through two tubing strings, a series of packers and Camco special mandrels.

Two of the zones would produce concurrently for 15 days, and the other two would produce concurrently the other 15 days of the month.

The only quadruple completion in the state so far is Magnolia Petroleum Co. No. 8 Santa Cruz Farms, which produces from four zones in San Carlos field, Hidalgo County (PW—Mar.14'58,p22).

•

Properties Change Hands

Sohio Petroleum Co. has purchased a 560-acre lease with 13 producing wells in Horseshoe Canyon field, San Juan County, N. M., in a deal said to be in the "multimillion-dollar bracket."

The purchase was made from Tom Bolack, Farmington (N. M.) independent who discovered the field in 1956.

The lease has a current allowable of about 700 b/d, from zones at depths of 1,100 ft. and 1,600 ft.

Sterling Oil of Oklahoma plans to buy a major interest from the syndicate which earlier this month bought all of Gulf Oil Corp. and Gulf Refining Co. properties in Citronelle field.

Jesse A. True, Sterling president, reports that Sterling will buy a one-third interest in the 75% interest held by George H. Jett and Bart C. Chamberlain.

Sterling's price was not disclosed. The original purchase from Gulf was said to represent a $6¾-million transaction, with Gulf retaining overriding royalties on production (PW—May8 '59,p8).

Sterling has a non-working-interest arrangement with Jett and Chamberlain, based upon a royalty equivalent to the working interests, True said.

Jett Drilling Co. will operate the acquired properties in the field, which is slated for a secondary recovery repressuring project shortly.

•

The Interior Dept. is seeking changes in lease regulations concerning land in which the federal government has retained mineral but not surface rights.

The proposed amendments would provide for "necessary safeguards" to protect the surface use of the land when someone applies for a mineral permit or lease.

The regulations would apply only in those cases where the surface ownership of the land is in state or local governments, or nonprofit educational, charitable, or religious groups.

•

Two Japanese geologists will arrive in Alaska June 6 to begin studies of oil and coal prospects in the new state.

The geologists will represent Japan Petroleum Exploration Co., Ltd., in which majority control is held by the Japanese government.

The geologists will be in Alaska from two to three weeks.

•

Robert H. Ray Co. has purchased all stock in McCollum Exploration and has formed a new firm, Robert H. Ray Co., Inc., to operate McCollum's Geograph weight-dropping seismic instrument.

The properties acquired include buildings in Houston and Midland, plus regional processing offices and seven domestic Geograph crews.

•

The Naval Supply Depot at Seattle, Wash., will offer for sale on June 11 a total of $3.5-million worth of oilfield equipment now stored at Point Barrow, Alaska.

The equipment offered includes three drilling rigs and related equipment, drill pipe, casing, and a full complement of miscellaneous parts and accessories.

Inquiries or bids should be addressed to U. S. Naval Supply Depot, Pier 91, Seattle 99.

•

A new, simplified system for making proration calculations becomes effective June 1 in Alberta.

The Alberta Oil & Gas Conservation Board has announced that as of that date it will begin using an overall "demand adjustment factor" in setting allowables, and will eliminate the "MPR potential" and "allowable adjustment factor" presently in use (PW—Apr.24'59,p21).

•

A new submersible drilling barge—the Don McMahon—has just gone into operation off the coast of Louisiana for Texaco Inc.

Built by Levingston Shipbuilding Co. for McNisco, Inc., the 188x50x 12-ft. barge is being used to drill a test on State Lease 340, off Iberia Parish. The barge can be used for drilling to 20,000 ft.

The barge, which is being operated by Nicklos Drilling Co., carries an ideal consolidated type 130 rig powered by three Superior Model PTDS-8 engines.

•

Nebraska's new conservation bill sets up a three-man commission, defines waste and illegal production, and otherwise regulates the oil and gas industry in that state.

The bill, which was passed recently by a 43-0 vote of the state's unicameral legislative, provides for financing of the commission by a tax on oil and gas production which is not to exceed two mills per dollar.

•

Reports of proposed pipeline construction apparently have fanned heavy interest in the Montana Land Board's June 2 lease sale.

By May 10, the board had already received applications for leases on 22,073 acres of state land in 59 tracts in 12 counties. Of these, 25 tracts, covering 8,200 acres, are in Liberty County, which borders on Alberta.

•

Standard Oil Co. of Texas has been authorized to carry out a pilot waterflood of the 7,500-ft. reservoir under its Kraeger, Clinton, and Head leases, Sherman field, Grayson County, Tex.

It's estimated that the entire reservoir covers a productive area of some 3,870 acres, and has an average effective thickness of 49 ft. Recovery figures indicate that about 24.4-million more bbl. of oil may be recovered if the entire field is flooded. Original oil in place is estimated at 100-million bbl.

The pilot waterflood is to be conducted pending outcome of an effort being made by operators in the field to unitize the entire area for secondary recovery.

•

A unitization program estimated to increase oil recovery from a Wichita County field by 300,000 bbl. has been approved by the Texas Railroad Commission.

The application by Magnolia Petroleum Co. and others covers 180 acres in the 1,700-ft. Gunsight reservoir.

Drilling Highlights

Alaska—Halbouty Alaska Oil Co. No. 1 Halasko-King Oil Co., on the Kenai Peninsula, has been abandoned at 12,037 ft. Company officials say they probably will lease the drilling rig to other firms. They add, however, that the company probably will drill another test in Alaska within a year. The abandoned hole is 4 mi. southwest of Standard Oil Co. of California No. 4 Swanson River Unit.

Kansas—Skelly Oil Co. No. 1 Cahoj, section 17-1s-24w, Rawlins County, recovered 3,100 ft. of 30-gravity oil and 305 ft. of oil- and gas-cut mud on 1½-hour drillstem test of the Lansing-Kansas City at 4,064-110 ft. On another 1½-hour test at 4,194-226 ft., recovery was 233 ft. of oil and 211 ft. of heavily oil- and gas-cut mud. Absence of water in the tests has spurred interest, since water has been the most disturbing factor in discoveries made to date in the western Kansas Pennsylvanian play. The prospect is 15 mi. south of Skelly's recent small Pennsylvanian discovery at Burr Oak field, Nebraska.

North Texas—Kay Kimbell No. 1 W. C. Brownlow, Elizabeth Barnes survey, Cooke County, was completed for 561 b/d of 38-gravity oil through 18/64-in. choke. Hole was drilled to 6,738 ft., and casing set to top of pay at 6,733 ft. for completion. The Oil Creek (Ordovician) sand discovery is 1½ mi. east of Kimbell-Sims field.

West Texas—Champlin Oil & Refining Co. No. 1 Higginbotham Bros., labor 1, league 302, Terry County School land survey, Gaines County, was completed for 718 b/d of 33.5-gravity oil through 16/64-in. choke and perforations at 12,737-50 ft. in the Devonian. The discovery is 2½ mi. east of North Amrow field.

In Martin County, Gordon P. Street No. 1 Whie, section 21, block 35, T-1-S, T&P survey, flowed at the rate of 420 b/d, based on 13-hour flow of 227.5 bbl. of 43.5-gravity oil through 16/64-in. choke and perforations at 9,292-97 ft. The Wolfcamp (Permian) discovery is 7 mi. northeast of Germania field.

New Mexico—McAlester Fuel Co. and Texas Crude Oil Co. No. 1-HN State, section 16-11s-33e, Lea County, flowed 44 bbl. of 45.6-gravity oil in the last 1½ hours of a 2-hour drillstem test of the Atoka sand at 10,743-93 ft. Gas and distillate had flowed on a previous test of the Atoka at 10,680-715 ft. The prospect is 1¾ mi. southwest of North Bagley pool.

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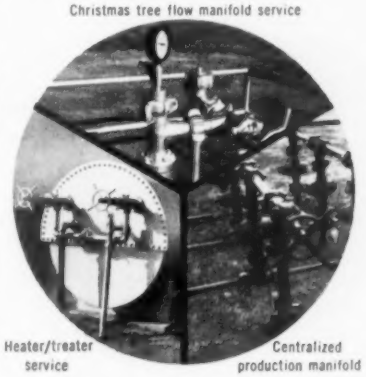

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Oxo Thrives on Well-Guarded Secrets

A process for the catalytic manufacture of aldehydes and alcohols with olefins as starting material, originated in Germany, and introduced in the U.S. after the last war, is attracting increasing interest from processors. It is the Oxo process.

Its importance is evidenced by the reticence of most of the companies using the process commercially to give any information about its operation.

This can be readily understood: Although more than 400 patents covering construction details have been issued since the first Oxo patent was applied for by Ruhrchemie A.G. in 1938, operational details are mostly unprotected, and are handled in a different manner by each company using the Oxo principle.

The process was pioneered in this country by the Esso Standard Oil Co. It offered its first iso-octyl alcohol made via the Oxo route to the trade in 1948.

Jersey Standard found it particularly convenient to apply to its plant the information brought back from Germany by the U.S. investigators' teams after World War II, because it had available an old high-pressure hydrogenation unit at its Baton Rouge refinery, which fitted the requirements perfectly.

This plant has been expanded from time to time, until it now has a yearly production in excess of 60-million lb. It is aiming at 120-million lb. in the near future.

Gulf Oil Corp. is using the Oxo process at its Port Arthur refinery, and a new Oxo plant in Philadelphia is due to come on stream in about a year.

Standard Oil Co. (Ind.) is operating its Oxo plant at Wood River, Ill., and has plans for another at a location still not selected.

Among the leading manufacturers of chemicals, Union Carbide Chemicals Co. and Tennessee Eastman Co. use the Oxo process. The latter is particularly well pleased with its results, and is now producing over 125-million lb. of Oxo products per year. Besides the production of butyl, isobutyl, and amyl aldehydes, it has started recently producing propyl aldehydes (PW—Sep.12'58,p38).

The Oxo process makes use of materials readily available in petroleum refineries.

It consists essentially of the reaction of hydrogen and carbon monoxide over olefins, in the presence of a cobalt catalyst, at relatively high pressure, to make an aldehyde.

The aldehyde can subsequently be converted into an alcohol, by hydrogenation. It can also be converted into an acid by oxidation, into an amine by reductive amination, or into several other products.

The final products always have one carbon atom more than the olefin feed stock. Thus, a heptene feedstock will produce an octyl aldehyde.

Low-molecular-weight olefins, such as ethylene and propylene, make good feedstocks for the Oxo process when used alone. Higher-molecular-weight olefins, on the other hand, are generally used in complex mixtures.

Hydrogen and carbon monoxide are also readily available in refineries. The process generally uses slightly more hydrogen than carbon monoxide—about 1.1 or 1.2 to 1—to make up for the fact that a small part of the hydrogen is consumed in the conversion of aldehyde to alcohol, which cannot be avoided.

The catalyst—a cobalt naphthenate, carbonyl, or hydrocarbonyl—is not poisoned by a small amount of sulfur present in the gases, but is more effective when there is no sulfur present. On the other hand, certain diolefins and some branch-chain paraffins are objectionable, and must be removed.

In a typical Oxo reaction (diagram, below), a feedstock consisting of a mixture of heptenes is used for the manufacture of iso-octyl alcohol.

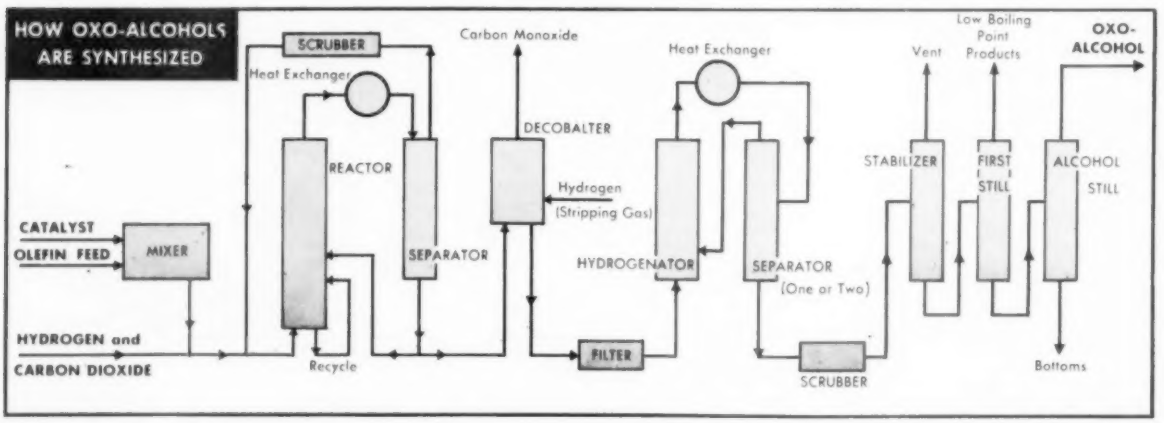
The catalyst contains 2.5% of cobalt naphthenate, and the reaction takes place at a temperature of 350F and a pressure of 3,000 psi. Some 81% of the olefins are converted. The final product consists of 75% alcohol, and 25% bottoms, which can be used in other processes. Decobalting is effected at 300F and a pressure of 88 psi., and the soluble cobalt is reduced from 0.081% to 0.001%.

Reaction temperature is high, because alcohol is the final product desired. When an aldehyde is made, however, the temperature is kept as low as possible.

The reaction is rapid with light straight-chain olefins; with heavier stocks and branched-chain olefins, it takes considerably more time.

Broadly stated, the materials now being produced by the Oxo method are either new products, or are products more difficult or more expensive to make via other routes.

Aldehydes and alcohols of five carbon molecules, which are produced in large quantities for conversion to higher-molecular-weight products such as 2-ethylhexanol, are one example: They can be made more easily and



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In a sense, oil company operations are like that. Millions of people, for example, quickly recognize the Cities Service emblem and the 19,000 stations this emblem identifies. Few, however, ever see its drilling rigs at work, probing four continents for oil . . . and no one ever sees its thousands of miles of pipelines.

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Only in this way can America be given what she must have for progress —more jobs, more and better petroleum products.

Through the low-cost, hydro-electric power created by Niagara's thundering waters, has grown one of the world's leading industrial regions. Niagara also keeps a closely guarded secret – its age. Geologists would like to know, but Lady Niagara isn't talking.

CITIES SERVICE

OIL'S FIRST CENTURY
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WORKING FOR PROGRESS

cheaply by the new method. For example, 2-ethylexanol is now made from propylene in three major steps, as against six major steps previously, with ethylene as the initial material.

Jersey Standard's biggest use for the Oxo alcohols it produces is in the making of plasticizers.

These are, in effect, solvents for resins or polymers, which change the physical qualities of these materials so that they become plastics. Esters of the iso-octyl and isodecyl alcohols (such as the phthalate, sebacate, adipate, or phosphate esters) make excellent plasticizers.

Another important application of Oxo alcohols and their derivatives is the preparation of detergents.

Ethylene oxide or propylene oxide reacts with the high-molecular-weight alcohols to form polyethers, which are nonionic surface-active agents soluble in water or oil.

Some esters of the higher-molecular-weight Oxo alcohols make excellent weed killers.

Certain crops, notably cotton, are very susceptible to vapors of some conventional weed killers. A good weed-killer must therefore have a low volatility. It must form emulsifiable concentrates, highly selective in their herbicidal activity, be liquid at low temperatures, and soluble in low-cost aromatic organic solvents.

Oxo alcohols are also used in the manufacture of synthetic lubricants for turbojet engines. The high-carbon alcohol esters of the dicarboxylic acids are particularly well adapted for that purpose. These oils are said to maintain their lubrication characteristics over a wide range of temperatures.

New Antioxidants Available

A group of new antioxidant additives for use with gasolines, jet fuels, and petroleum-base and synthetic lubricants has just been put on the market by Ethyl Corp.

All three are ortho-alkylated phenols, produced from the reaction of isobutylene and phenol. They are easy to handle, economical, and have a broad field of applications, Ethyl says.

The new gasoline additive, a liquid, checks the formation of existing or "potential" gums, and also minimizes the decomposition of tetraethyl lead in storage.

Being liquid, it is easily blended with the fuels, and does not need the solvent, such as toluene, which is required with solid antioxidants. Its cost, 55¢ to 64¢ a lb., is low, Ethyl says. It has received military approval for gasoline and all grades of jet fuels. It is also an effective antioxidant for industrial oils.

The second additive, a powder, protects petroleum-base lubricants against oxidation and wear. It is used in gasoline and diesel engines, and is also effective in automatic transmission fluids, alone or in combination with commercial detergent additives, such as phenates or sulfonates. Ethyl says extensive tests have demonstrated that ring wear, and especially ring scuffing, can be appreciably reduced by the use of this antioxidant.

Its use is spreading for aviation engine oil.

One major refiner is using it on a world-wide basis for its oil in aviation reciprocating engines. Another refiner is adding it successfully to its diesel oil for railroads. Still another uses it for initial fills of automatic transmission fluid, on the assembly line of new cars.

The third additive is designed specifically to protect the synthetic lubes used in jet aircraft engines against oxidation during storage. It is also effective as an additive for greases, and prevents their discoloration.

It is combined with an amine, and thus possesses both the surface-active quality of the amine and the desirable stability of a "hindered" phenolic antioxidant.

Most present antioxidants for gasoline are of three basic types: aminophenol, phenylenediamine, and alkylated phenol.

The aminophenol type, one of the first used for cracked gasoline, is very effective, but has the disadvantage of being soluble in water and in caustic, and of contributing to induction-system deposits (carburetor, inlet manifold, and valves). As a result, its use is now limited.

The phenylenediamine type, currently the most widely used gasoline antioxidant, is insoluble in water and caustic, and, in addition, has the ability to sweeten cracked gasoline. However, this "inhibitor-sweetening" is becoming less important because an increasingly large quantity of mercaptan sulfur is being removed in refinery processing.

The alkylated phenol type, also insoluble in water and caustic, has the added advantage of not being susceptible to air oxidation during storage and handling, and contributes to induction system cleanliness.

The new Ethyl additives are variants of this third type.

Both the phenylenediamine and the alkylated phenol types are also used as antioxidants for jet fuels. And the alkylated phenols are generally used in industrial oils.

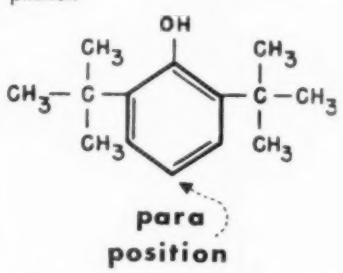
Another class of compounds, the aromatic amines, are used as antioxidants in industrial oils as well as in lubricating greases.

For crankcase oils and automatic transmission fluids, zinc dithiophosphate and the P_2S_5-turpene reaction products are widely used as antioxidants.

Ethyl has also developed ortho-alkylated products for other uses. Among them are thermal stabilizers for jet fuel and antioxidants for natural and synthetic rubbers, for plastics such as polyethylene and polypropylene, and for many processes of the petrochemical industry.

The Chemistry of Ethyl's Antioxidants

The basic building block for all three of Ethyl Corp.'s new antioxidants is this 2,6-di-tert-butylphenol:



The gasoline antioxidant is a mixture of at least 75% of the basic compound, plus approximately equal quantities of two variants: one with a third tertiary butyl radical in the para position; the other with only one tertiary butyl radical.

The antioxidant for petroleum-base lubes is a molecule containing two of the "building blocks" linked at the para position, through a methylene (CH_2) group as a "bridge."

The compound for use with synthetic lubes has a dimethylamine group linked to the para position of the basic compound through a methylene bridge (CH_2-N-[CH_3]$_2$).

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What's New / IN PROCESSING

Esso Research and Engineering Co. has developed a semiportable analytical "room," which can be "plugged into" refinery units to give continuous analyses of the process stream.

The "room," actually a modified truck body, presently contains a chromatographic analyzer for the analysis of light hydrocarbons and inert gases. Other planned features include a vapor-pressure recorder, a moisture analyzer, an initial-boiling-point recorder, a viscometer, and various temperature and pressure recorders.

The function of the unit will be two-fold: to analyze the process stream and to evaluate the economic applications of analyzer control.

•

Texas Natural Gasoline Corp. plans to build a natural gas liquids plant somewhere along Columbia Gulf Transmission Co.'s gas line, which extends from Louisiana to eastern Kentucky. The exact size and location of the plant have not yet been determined. Texas Natural will own, engineer, and operate the plant, which is expected to go on stream early in 1960.

•

A diversified research program, aimed at studying the effect of radiation on petroleum and petrochemical processing, will be sponsored by Standard Oil Co. (Ind.) in conjunction with the Armour Research Foundation of the Illinois Institute of Technology.

Facilities to be used in the project include ARF's 100-kw. reactor, and two accelerators—a 35-million-volt machine and a high-intensity 8-million-volt machine. The accelerators are being made available to Armour Research through the cooperation of Michael Reese Hospital, Chicago, and W. F. & John Barnes Co., Rockford, Ill.

•

Birwelco, Ltd., and its subsidiary, Brown Finture, Ltd., have received an $840,000 contract to supply furnaces and tank heaters to the Petrobras 90,000 b/d refinery, now under construction near Rio de Janeiro, Brazil.

The British firms will supply six Petrochem-Isoflow furnaces, four of which will heat hydrocarbon vapors and hydrogen to temperatures up to 100F. A total of 180 standard TF-18 type tank heaters will be installed in the refinery's storage tanks.

•

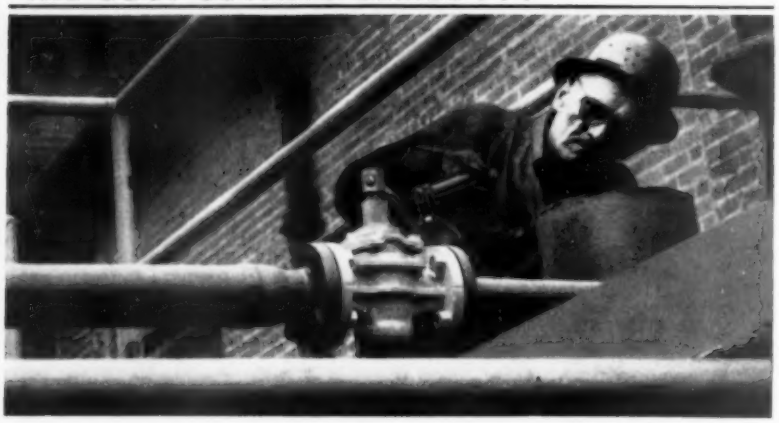
Vacuum tower bottoms from the big new crude still of Standard Oil Co. (Ind.) will be run regularly to asphalt production during the asphalt shipping season.

The asphalt will require a minimum of further processing, probably only oxidation and blending. The still has a vacuum distillation portion and an atmospheric portion (PW—May1,'59, p40).

•

Union Carbide Chemicals Co., a division of Union Carbide Corp., has doubled the production capacity for polyether polyols at its South Charleston (W. Va.) plant. In the past year, the company has developed eight polyethers, under the trade name Niax, for use in the manufacture of polyether urethane foams.

THE COST CUTTING SERIES . . .



NEW CORROSION RESISTANT VALVES

Lubricated plug valves with special coatings on plugs and bodies make iron valves highly corrosion resistant at a fraction of the cost of special alloy valves. Rockwell-Nordstrom valves, shown above, are now available with Kanigen (applied by General American Transportation Corp.) coatings which give iron the corrosion resistance of nickel and stainless steel. Penton coatings (patented by National Polymer, Inc.) are also available for protecting valves against most acids, caustics, brines, and inorganic solvents. The new Rockwell-Nordstrom coated valves have been fully field tested on a wide range of petroleum production, refining and marketing services. For complete details: write Rockwell Manufacturing Company, Pittsburgh 8, Pa.

ROCKWELL MANUFACTURING COMPANY
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What Iraq Talks Do—and Don't—Cover

Current anxiety over the uncertain political outlook in Iraq has tended to obscure one important fact: Baghdad's relations with Iraq Petroleum Co. remain unequivocally correct, if not without some problems.

Much confusion has arisen, both in the U.S. and abroad, in the wake of contradictory and somewhat sensational reports.

A variety of issues, it is true, are being discussed with the internationally owned IPC by Prime Minister Kassim as well as by Ibrahim Kubba, the Economy Minister. But they represent relatively moderate government requests that in no way justify reports of an impending drastic change in IPC's concession terms. Kubba, in fact, recently took pains to state that the government is "resolved" to submit to arbitration the points on which agreement is not reached—as provided in the existing concession agreements.

Top authoritative sources affirm that the Kassim government has made no demands—nor even hinted at any—for a basic change in IPC's concession contracts:

(1) It has made no demand for a change in 50-50 profit-sharing.

There is no basis for recent inferences that Baghdad is trying to force a 60-40 profit split. Most of these inferences were drawn in dispatches originating in Paris, which quoted an unnamed Foreign Ministry source as saying that Iraq was demanding "higher royalties."

Iraq is, in fact, expecting "higher royalties"—but as a result of the expansion program now under way, by which IPC expects to double its 1958 oil export capacity to 1.4-million b/d by 1962.

The Kassim government also has reminded the Iraqi public that it is protected on getting at least as good a return as any other Middle East government. Its agreement with IPC provides for a review of terms if and when any other country is proved to be receiving more than 50% of oil profits.

(2) It has made no demand for nationalization of the 23¾% French share of IPC.

The government did, in fact, look into this question as a political gesture but has apparently dropped the whole issue.

The government also explored the possibility of purchasing a 20% share of IPC, but also dropped this tangent.

What the government has requested, in contrast, is modification of certain operating arrangements, or assistance from IPC, covering these eight main points:

(1) Construction of a pipeline from the northern fields to the Persian Gulf, as a "security" measure. Iraq's only present pipeline outlets run to the Mediterranean through the Syrian territory of the United Arab Republic.

IPC is not ready to build or finance such a line. In any case, the proposal is expected to be dropped by Baghdad once the economics are looked into.

Iraq has no deep-water port on the Persian Gulf, a factor that to this point has limited exports from the southern Basrah fields. The Basrah reserves are more than ample to take up the full capacity of the new offshore loading terminal IPC is starting building. Thus, a pipeline to the Gulf from the north would serve no function, since that oil would only displace oil that would otherwise be shipped from Basrah.

(2) Reduction of the interest rate on IPC's 1957 loan to Iraq.

IPC is understood to be willing to cut the rate to 3% annually, from 5½% as well as to make other adjustments in terms. The loan was originally made to tide the government over its loss of revenues during the Suez crisis, when Syrian sabotage of IPC's pipeline system crippled the flow of oil to the Mediterranean.

(3) Supply of crude oil "at cost" for government refining for export.

IPC has refused to supply oil at cost for such purposes, but has agreed that the government may take its 12½% royalty in oil within Iraq for use in any export refineries it may consider building.

Under existing arrangements, IPC supplies oil at cost to the three government refineries for local marketing needs only.

Now, in a compromise move, IPC has agreed to the government's exporting any "incidental" surpluses

50-50 Law for French Africa?

PARIS—The French government is reportedly studying the possibility of adapting its new 50-50 Sahara oil law for application in other African territories of the French Community. The law was passed last November (PW—Dec. 5'58,p61).

As a first step, the law in its present form will be extended to Niger, which lies between the Sahara and Nigeria. This will result from an agreement soon to be signed between Niger's local government and OCRS (the Sahara Administration), according to an OCRS official.

Agreements of the same type may later be negotiated with local governments of Soudan and Tchad.

Oil exploration and production in most French territories have been governed in the past few years by a skeleton of general regulations drawn up in 1954 and amended in 1957. These left such questions as royalties, taxes, depletion allowances, and investments to the discretion of local governments.

However, last fall's elections, which led to the establishment of the French Community, changed the structure of local governments and their prerogatives. This may require revision of the basic overseas mining regulations, according to some French legal experts.

The mining provisions of the Sahara oil law could easily be extended to other territories, but tax provisions will have to be adjusted to fit the fiscal regimes of the territories, according to these experts. The Sahara law is based on the fiscal system in Algeria.

Government and private oil companies and legal experts would like to see an arbitration clause included in the new versions.

The original draft of the Sahara law included an arbitration provision, but it was struck out by the highest French judicial body, the Conseil d'Etat. As the law now stands, disputes on such questions as production, transportation, taxes, and royalties must be submitted to the Conseil d'Etat for settlement.

from operation of these refineries "at their existing designed capacity."

(4) Government appointment of an "executive director" of IPC. IPC has agreed in principle to Iraq's demand for a government representative with more than nominal responsibilities attached to membership solely on the board (on which two positions are reserved for Iraq).

On the other hand, IPC feels that the management of the company, which is in the hands of its three executive directors, cannot be passed to a government official whose primary responsibility would not be to the shareholders of the company.

An effort to reach a solution that would give the government a greater position in IPC, and still be compatible with effective corporate management, is now under discussion.

(5) More "Iraqization" of IPC operations.

The government recently presented IPC with a specific list of jobs, now held by foreigners, which Baghdad feels can be adequately filled by Iraqis.

(6) Relinquishment of acreage.

IPC had agreed in principle with the previous government to relinquish a considerable part of its concessions, which cover almost all of Iraq. Recently it gave up the offshore Basrah concession, and has made several other relinquishment offers (PW—Dec.19 '58,p15).

Progress of the latest discussions suggests agreement may be reached shortly on an immediate relinquishment of 50% of the concession area.

The government, meanwhile, has indicated it is not likely to open this acreage to bids for new concessions. It is thinking more in terms of developing the area as government reserves—with the aid of contractors.

(7) Transport of oil from the government's small Khanaqin field to the Mediterranean through IPC pipelines.

Studies are now under way on the terms for such transport. Earlier, the company had pointed out that it would have no spare pipeline capacity available for Khanaqin oil until 1962.

(8) Reduction in Iraq's notice for taking its 12½% royalty in oil.

Formerly, Baghdad had to give six months' notice that it intended to take such oil in the following year. Now, IPC has agreed to a reduction in the notice time to the "practical minimum," and to allow Iraq to exercise its option to take the royalty in kind quarterly instead of annually.

Venezuela Urges Arab Price Controls

CARACAS—Another strong bid for Middle East cooperation with Venezuela in stabilizing oil prices was issued last week by Minister of Mines & Hydrocarbons Dr. Juan Perez Alfonzo.

In a statement issued at a press conference referring to the recent Arab Oil Congress in Cairo, the Minister said: "The problem of prices, and the necessity of intervention now by the governments of the producing countries affected, is a reality that is obvious to everyone."

The Arab countries' acceptance of Venezuela's policy of maintaining prices in the face of possible competition for markets is demonstrated in the Cairo Oil Congress resolutions, Perez Alfonzo said.

The Minister cited the resolution recommending that Arab governments take the steps necessary for prior study and approval of any changes in prices as recognition of the necessity for government intervention in the problem of prices.

Venezuela's attendance, though only an observer, was the "determining factor" in the success of the Arab Oil Congress, the Minister said.

The meeting's importance, he asserted, would otherwise have been "greatly impaired" by Iraq's official absence.

Based on conversations he had with Iraqis present in Cairo at the time of the Congress, Perez Alfonzo feels, "It is certain that Iraq will look with favor" on the Cairo recommendations "as a measure to protect the interests of producing countries."

Iraq's absence, he noted, was due to political differences with Nasser, and not to differences over oil policy. For this reason, he predicts, Iraq will adhere to the resolutions passed.

The Minister further said that Venezuela expects to maintain contact with Arab countries on oil questions in the future, though no formal arrangements have been made.

In his statement on the "necessity" for government intervention in oil pricing, the Minister again referred to recent price cuts led by British Petroleum Co. in the Middle East (PW—Apr.17'59,p16).

BP's cuts, he observed, benefit Great Britain as a consumer country by the full amount of the cut, whereas BP divides its loss of revenue equally with the governments of the countries in which it operates.

Referring to "supposed" present competition for markets, Perez Alfonzo declared, in part:

This competition—created by those who were able to keep production levels in line with markets when profits were more easily captured by the companies which trade in oil—now turns out to be more or less inexorable, like an Act of God.

"It happens that profits are now divided more equitably between producing countries and companies. Some consuming countries—like Great Britain—see that a price cut represents a great benefit, even though the company that forces this cut appears to be reducing its profits.

"Great Britain in 1958 consumed an average of 620,000 b/d, an increase of more than 25% over 1957.

"Calculated on the 1958 base, the 620,000 b/d purchased at 18¢ less—as a hypothetical figure—would represent a reduction of almost $112,000 daily in foreign currency expenditures. Meanwhile, the loss of this 18¢ for BP is shared equally with the countries from which it extracts petroleum—that is, BP loses only 9¢ per bbl. This loss, moreover, refers to prices of crudes that actually go to refineries controlled by the company and that are not reflected in the products sold."

Tariki, Wahba Named To Aramco Board

BEIRUT—Sheikh Abdullah Tariki, Saudi Arabia's director-general of petroleum affairs, is one of two government-designated Saudis who will be formally elected to the board of Arabian American Oil Co. at the annual meeting in San Francisco this week.

The other is Egyptian-born Sheikh Hafiz Wahba, 70, a court advisor who was Saudi Arabia's ranking diplomat in Britain for over a quarter-century.

Though Aramco has for some years reserved two places on its board for government representatives, Tariki and Wahba are the first to be designated by Saudi Arabia.

What's New / AROUND THE WORLD

VENEZUELA—Development drilling near the initial—and sole—wildcat discovery in the Gulf of Paria will be started by early fall. This was revealed by Continental Oil, a partner in Paria Operations, Inc., together with Texaco, Ohio Oil, Cities Service, and Richfield.

Development drilling will be done from a multiwell platform to be set up this summer near the discovery well, brought in a year ago with an initial flow of about 2,000 b/d of 22-gravity oil from Miocene sands at 4,026-125 ft. and 4,182-226 ft. The next two wildcats were dry. The fourth test is now being drilled below 4,000 ft.

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FRENCH SAHARA—The Safrep group, which includes Sinclair Oil and Newmont Mining, will spud in its first wildcat around the end of this month on its Erg Bourarhet permit, 27 mi. southwest of the Edjele oil field, in the eastern Sahara.

Safrep (Soc. Anonyme Francaise de Recherches et d'Exploitation de Petrole) is operator on four of the eight permits held by the group, and Sinclair on the other four.

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SPANISH SAHARA—More than 20 oil companies, mostly U.S., are expected to file bids June 23 for oil concessions here, under Spain's new 50-50 oil law (PW—Jan.16'59,p66).

According to a government spokesman that is the date regulations and maps delineating the tracts will be issued. The government will publish the text of the applications 30 days later for parliament's O.K. The concessions will go into effect 20 days after approval

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QATAR—A week-long strike of oil workers ended May 8 in a general wage rise of about 20¢ per day. This was the latest in a series of short strikes at Qatar Petroleum Co.'s operations.

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NIGERIA—Socony Mobil has agreed with the Nigerian government on terms for a 2.5-million-acre oil exploration license in the Western Region. The agreement is retroactive to Apr. 24, 1958, when exploration actually started. The area stretches from the French border, at Dahomey, to Lagos, and as far north as Abeokuta.

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IRAN—Russia has made unofficial approaches on participation in Iranian oil development, the Shah of Iran confirmed last week at a press conference in London. He made no further comment.

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VENEZUELA—The Lake Maracaibo channel for oil tankers will be deepened from the present 33½ ft. to 49 ft. by 1963, the Ministry of Mines & Hydrocarbons says in its annual report.

About 900,000 b/d of crude and products were shipped out of the lake last year through the 19-mi. channel, opened in 1956. Tankers pay a toll of 3¢ per bbl. of cargo. The National Institute of Waterways will rent the world's biggest dredge for the job from National Bulk Carriers, for whom it is now being built in Japan.

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FRENCH SAHARA—Two new wildcats will be drilled near the Sahara's newest oil area—El Gassi, 50 mi. south of Hassi Messaoud. Soc. Nationale des Petroles d'Aquitaine reports that latest production tests confirm that the discovery well—No. 1 El Gassi—will produce 2,100 b/d (PW—Mar.6'59,p34). Pay zone is 295 ft. thick.

No. 2 El Gassi will be spudded in 6 mi. south of No. 1. In June, No. 1 El Agreb will be drilled 9 mi. southwest of No. 1 El Gassi.

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BRITISH HONDURAS—The Government has invited applications by May 31 for prospecting licenses on some 5,600 sq. mi. of crown oil rights north of the Maya Mts.

Licenses on 200-sq. mi. blocks will be granted for an initial four years, extendable one year. After that, half the acreage may be converted to 30-year mining leases.

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TURKEY—Esso Standard is now drilling below 850 ft. in its sixth wildcat—the No. 1 Kavika Dag. The test is located 55 mi. east of the Garzan oil field. Esso previously abandoned its No. 1 Kastel, in District V, at 10,445 ft.

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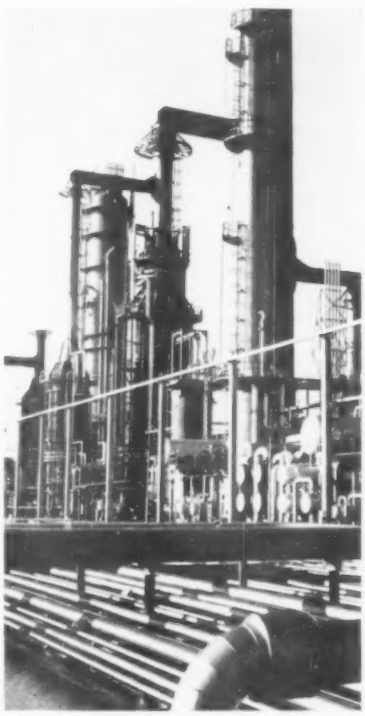
BURMA—Burma Oil Co. is drilling below 5,000 ft. in its second wildcat in the Irrawaddy Delta, on the bank of the To River, about 4 mi. east of Dedaye. The first test, No. 1 Kyaiklat, was abandoned in February.

It was the first wildcat drilled after World War II.

•

INDIA—Caltex, Stanvac, and Burmah Shell have been asked to set up a committee to advise the government on establishing its own marketing company (PW—Mar.20'59,p74).

Oil Minister K. D. Malaviya said last week there would be no move to encroach in the operational fields of the three companies, and that they would continue to distribute most of India's oil.



Open German Unit

Esso last week officially inaugurated its new 68,500 b/d, $55-million Cologne refinery, located at the southern end of the 240-mi. Wilhelmshaven pipeline. The highly automated plant had already been put on stream.

DEPT/Transportation & Storage

New Way to Cut Product Commingling

A balloon-like "ball" will save Shell Oil Co. the better part of $265,000 a year, mainly by reducing product commingling in its pipelines, Shell said last week.

That's the company's conclusion after months of testing the new device, which was first marketed last year by F. H. Maloney Co., of Houston (PW—Mar.28'59,p54).

The "ball" is a liquid-filled sphere available in a wide range of sizes for use in place of dumbbell-shaped product pipeline scraper-separators.

Maloney's "pipeline spheroids," developed in cooperation with Shell, come in sizes to fit pipelines up to 24 in. in diameter, and will soon be available for pipelines up to 36-in.

They're made of a special compound of natural rubber, neoprene, and Hycar, and can reportedly withstand temperatures ranging from 250F down to minus 40F.

Shell says the spheroid provides "excellent sealing action because it is inflated . . . to a precise diameter of about 1% larger than the bore of the pipeline.

"Since the internal action of the ball is a combination of rolling and sliding, the wear is minimized, and to some extent distributed over the entire spheroid surface.

"Because of the heavy wall thickness of the ball, the wear can be compensated for by expanding used balls to the required diameter for continued usage."

Shell is using the spheroids in place of the dumbbell scraper—a heavy steel rod with a rubber or neoprene cup (or two flat rubber discs) at each end of the rod.

Much of what Shell saves by playing the new "pipeline ball game" will be the result of more efficient product separation in the line.

Product contamination by commingling is one of the biggest headaches in product pipelining today.

But Shell says its new spheroid results in "a 50% reduction in the volume of interfacial mixture between two liquids—quite a saving when a product-to-product interface protected by two conventional scrapers generates some 500 to 700 bbl. of mixture."

Just as important as the spheroid's good sealing action, Shell figures, is the fact that "it is convenient to place more spheroids than scrapers in a line.

"Five spheroids," Shell says, "or even more, may be used to separate products; in the past, only two scrapers could conveniently be used. Up to certain limits, the intermixing between two products is decreased as the number of spheroids within the interface is increased."

LAUNCHING TUBE, which also stores spheroids, is controlled automatically.

This better separation could eventually result in a wider variety of batched liquids in a line.

Says Shell: "With this decreased intermixing, new possibilities exist for increasing the number and types of fluids handled through a single line."

Important savings in manpower costs are also expected from use of the spheroids.

Shell talks of such savings this way: "Since manual launching of scrapers will be replaced by the installation of an automatic spheroid launching device, and the spheroids will pass five pumping stations [on Shell's north line from Wood River, Ill., to the Chicago area] through automatic station bypasses without shutting down the pumps, the Maloney Co.'s spheroid will bring about material savings in labor costs . . ."

Over the long range, the cost of the spheroids themselves will be less than that of conventional scraper-separators, Shell says.

"Because a spheroid's life is on the order of 10 to 15 times the life of a scraper, product separator costs will fall."

Shell's current work to change its North Line products system to remote-control will include special modifications for the new spheroid application.

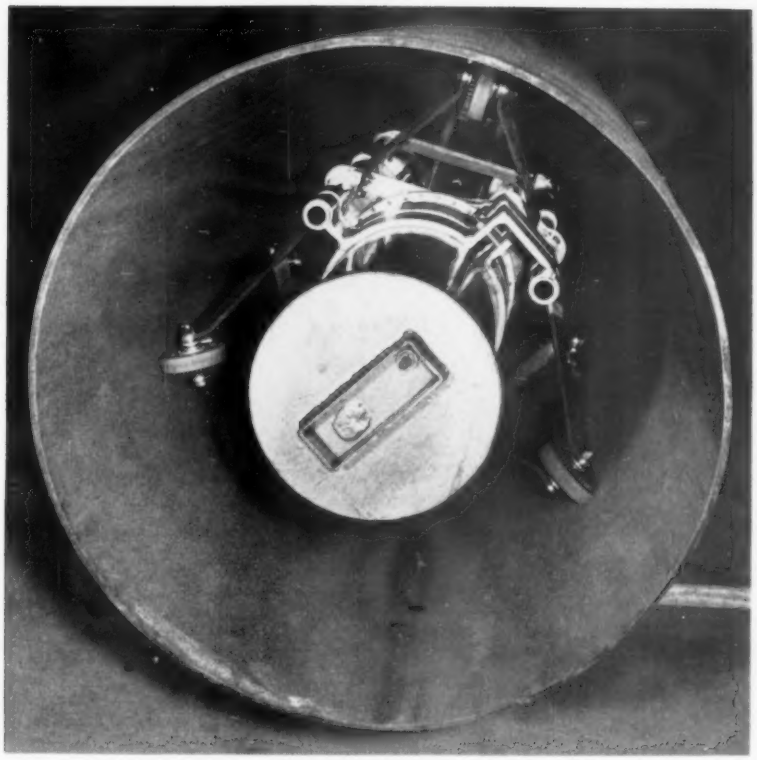
Five diesel pump stations along the Wood River-to-Chicago line are being equipped for unattended operation. They'll be controlled from Indianapolis.

At the same time, Shell is modifying pump-station piping, junction piping, and meter-proving facilities to permit free passage of the spheroids along the line.

Other pipeline companies are also getting into the "pipeline ball game."

Texas Eastern Transmission Corp. has been testing the spheroids on its Little Big Inch products system from Houston to the Middle West.

And Minnesota Pipe Line Co. is also studying possible uses of the "balls" for batching crudes.



INTERNAL X-RAY of pipe welds is now said to be faster, more accurate, as . . .

Weld Inspection Goes Continuous

A new Houston-developed X-ray machine may cut the cost of inspecting pipe welds in half by providing faster and better X-ray negatives, the machine's builder, Travel-Ray Corp., said this week.

This new device is an X-ray generator housed in a wheeled carriage. By fitting the carriage into a section of pipe, inspectors can remotely steer the instrument through the pipe, letting it flash X-rays against welded areas. In this manner, the weld inspectors obtain X-ray silhouettes of the dense welds projected against negatives placed outside the pipe.

Instead of X-raying each weld with separate exposures, the new instrument, the "Travel-Ray" moves continuously through the pipe, projecting a steady flow of X-rays toward the welded areas.

Without pausing, the Travel-Ray rolls along inside the pipe, exposing every inch of every weld to penetrating X-rays. The unit is said to be able to completely radiograph 40 ft. of pipe in 45 seconds.

And pipeline inspectors can X-ray up to 2,000 ft. of pipe in one continuous operation, without stopping the Travel-Ray.

In contrast, some weld inspection units now in use expose weld sections only when the energy source comes to a stop (PW—Jul.18'58,p66).

These units employ radioactive iridium to project gamma rays against pipe welds from the outside. (These rays must be shielded to protect inspectors from exposure to radioactivity.)

Because of the short life of this energy source, such devices are limited to about 40 exposures a day.

The Travel-Ray can radiograph "on the run," because it possesses a specially designed X-ray tube.

The tube concentrates the X-rays in a narrow beam of parallel rays. According to Travel-Ray president Byron Donzis, the concentration of the beam, and the speed of the tube traveling through the pipe, virtually eliminate the blurring or fogging caused by scatter radiation.

The Travel-Ray can be used to inspect welds on pipe from 12 in. to 36 in. in diameter.

By expanding or contracting the carriage, inspectors can fit the wheels of the Travel-Ray snugly against the interior walls of any size pipe within these limits.

What's New
IN TRANSPORTATION

Ripples from the U.S. mandatory imports control plan have reached Japan. Tanker operators there are asking the government to help them make up for the business they've lost due to the U.S. controls.

For one thing, the Japan Tanker Owners Assn. wants the Japanese government to make national refineries transfer their foreign tanker charters to Japanese operators.

The association figures that such transfer would involve some 740,000 deadweight tons. If the transfer is not made, the association contends, about 200,000 dwt. of Japanese-flag tankers will have to go into layup later this year.

•

Colorado Interstate Gas Co. has just received Federal Power Commission approval to sell its gas transmission facilities in Colorado's Arkansas Valley to Citizens Utilities Co., La Junta, Colo.

The sale involves 110 mi. of line ranging in size from 2-in. to 8-in., and several metering and regulating stations.

•

Another big pipe mill is planned for Alberta, Canada.

Page Hersey Tubes, Ltd., and Steel Co. of Canada, Ltd., intend to build a $10-million plant—one they say will be Canada's largest—at Edmonton. The plant will make up to 325,000 tons of big-inch pipe—16 in. to 42 in. in diameter—annually.

•

A new surface-chemical agent developed in England is being billed as "a significant contribution to the prevention of oil pollution of the sea."

The chemical, "Fomescol," goes about its sea-pollution-prevention work this way: Fomescol is applied to the tank walls of a tanker after it has discharged its cargo. The chemical recovers "up to 80%" of the oil on the tank wall making unnecessary tank washing and discharge into the sea.

Engineering

Rockwell Mfg. Co. is now marketing a new spherical-type valve, which the company calls "particularly suitable for gas, crude, and product pipelines."

Is the Farm Market Still Growing?

This year, farmers will purchase over $1.6-billion worth of petroleum products—the biggest commercial account in the nation. But is the farm market accelerating or tapering off? Midwest marketers see a slackening off in farm demand, but in the Far West marketers foresee a continued expansion.

To Standard Oil Co. of California, the farm market outlook is optimistic. The farm economy in the West, according to Standard, appears to be growing at the rate of 3% annually. And with the continuous mechanization of farms, the over-all demand for petroleum products keeps increasing, company observers say.

But in the corn and wheat belts of the Midwest, major oil marketers are watching the spring planting season without enthusiasm. The only reason one company's spokesman gives for selling to farmers is that "somebody's going to get the business, so it might as well be us."

Marketers in the Midwest feel that the big growth of the farm market came after World War II, when farmers started buying more tractors and new machines to catch up with the modernization of industry.

But now, Midwest marketers think, the farmer is almost "saturated" with new equipment.

National figures indicate that the farmer began to slacken off in his tractor buying as early as 1955.

And a recent survey of Iowa farmers (the nation's top corn producers) shows that their peak year for tractor buying was 1954.

What Midwest oil marketers are witnessing is a shift in emphasis in farm mechanization. Having filled the fields and prairies with everything from combines and cornpickers to huskers and harvesters, the farmer is now bringing his enthusiasm for mechanization into livestock raising.

In making this shift, the farmer will indeed turn to more machines—but this time the main energy source will be electricity, not oil.

One reason that the Far West marketer has not yet experienced a slackening in farm market demand is the continuous shifting of farm lands in the West.

Areas near the cities, where alfalfa, avacados, and other products once grew, are now covered with suburban homes. The farmer has moved away, pioneering into the once-barren country farther inland, opening new markets to oil.

Following the farmer have been the oil companies, ready to supply lubricants for irrigation pumps, fuels for earth moving tractors, and gasoline for trucks that must travel greater distances to the metropolis.

There's one farm market in the Midwest that, surprisingly, is relatively untapped: the market for home heating fuels. Surveys reveal that wood and coal are still the most important source of heat for most Midwest farmers. In Michigan, for example, 68% of the home furnaces on farms are fueled with coal or wood. In Ohio, the figure is 63%; in North Dakota, 58%.

To a great extent, the Midwest farmer still uses a stove, or some form of space or circulating heater, instead of a central furnace to warm his home.

In Illinois, a typical Midwestern state, 37% of the farmers surveyed reported that they used only such heaters to heat their homes, and that 51% of these heaters use coal or wood.

One good sign in both the Midwest and the Far West is that farms are getting larger and less numerous. Older farmers are retiring and selling out to younger men who, in many cases, own more than one farm.

Storage capacity on farms, although small compared to most commercial accounts, is growing rapidly. Recent surveys indicate that most farmers are now able to store between 150 bbl. and 400 bbl. on their farms.

These factors, marketers say, lead to a more profitable distribution operation. With the farmer able to purchase larger quantities of fuel in one shipment, marketers can reduce the number of deliveries that must be made.

But competition for the farm market is very keen. One West Coast oil distributor reveals that it is often necessary to give discounts to farmers.

Most of the major oil companies have almost completely given up direct distribution to farmers. Last year's exceptionally dry autumn permitted California farmers to do many springtime chores. Such fluctuations in the weather can throw the farmer's demand for oil "out of kilter." Suppliers have found that the flexibility of jobbers makes them better suited for farm distribution.

We know so much about gasoline buyers, it's almost embarrassing!

We know, for example, certain people who always buy certain brands of gas. Then we know compulsive brand switchers and off-brand buyers. We even know some people who say *they* know that all gasolines are alike (and then pass up station after station to find their favorite kind!).

Some advertising agencies interested in acquiring a gasoline account would keep their eye on the industry's ads. Campbell-Ewald's been keeping its eye on the people who buy gasoline. And who could be in a better position to do this than an agency that's been helping to sell automobiles and allied products to these same people for more than forty years?

Knowing the people who buy your products —what they like, what they don't like, how they think—and knowing how to communicate with them—is a highly developed art at Campbell-Ewald. In fact, we've used it to create successful advertising for commodities as varied as beer and batteries.

It takes all kinds of people to make a market—for *anything*. And if you're in the market for people, it's high time we had a chat.

CAMPBELL-EWALD

Advertising well directed

Detroit • New York • Chicago • Los Angeles • Hollywood • San Francisco • Washington • Denver • Atlanta • Dallas • Kansas City • Cincinnati

COMING DOWN: the Calso sign . . .

GOING UP: the Chevron sign, as . . .

Caloil Changes Its Symbol

In 13 states on the eastern seaboard, motorists had been teased in recent weeks by a whimsical pun draped over the station signs of California Oil Co.: "What's come over our Calso signs?"

Caloil dealers knew what had come over the station signs: The time had finally come to commit the brand name "Calso" to history.

Ever since May, 1958, Caloil dealers and their customers had watched with interest (and increased sales) as California Oil Co. changed its brand name from Calso to Chevron. First move was to change the name on 7,000 gasoline pumps.

Finally, last week, Caloil pulled the wraps from its new signs in 2,300 stations from Maine to Virginia.

Now the name "Chevron" hails eastern motorists, joining Caloil's stations with 11,700 other Chevron stations in the West and Southwest, and in Alaska, Hawaii, and parts of Canada and Latin America.

Throughout the changeover, Caloil joked with motorists, creating a new advertising character—Hy Finn. Hy told motorists that Chevron gasoline fits any shape gas tank; that if his car ran out of Chevron, it would stop; that cars using Chevron could go either forwards or backwards.

Then, last week, Hy stepped into newspapers, billboards, television screens, and radios to announce that Chevron gasoline can now be purchased at Chevron stations.

The "Chevronizing" of Caloil stations is part of the national identification sought by Standard Oil Co. of California (Caloil's parent).

From its regional position in the Far West, California Standard has reached out across the nation. With the establishment of Caloil in 1946, it got a toe-hold on the East Coast. But the Calso sign was never very popular with motorists. In some areas, in fact, it was associated with cut-rate gasoline.

for QUALITY . . . QUANTITY . . . SERVICE
Whatever the GRADE and the VOLUME of
NATURAL GASOLINE
Just rely on WARREN'S versatile facilities to give you dependable deliveries . . . WHERE and WHEN and the WAY you want them.
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TULSA, OKLAHOMA • Cable Addresses: STAVOLENE, WARREN
EXPORT TERMINALS: CORPUS CHRISTI, PORT ARTHUR, BAYTOWN, TEXAS CITY AND WARRENGAS (HOUSTON), TEXAS, SAN PEDRO, CALIF.

What's New
IN MARKETING

Custom gasoline blending has started in Germany. British Petroleum Co. is trying to lure Volksvagen owners and other German motorists into its stations with a choice of five grades of gasoline from a single pump. BP plans to install the blending pump in all of its 3,000 stations in Germany.

In Toronto, Canada, Imperial Oil Ltd. is experimenting with nine blends of gasoline (PW—May1'59,p54).

•

The federal fair-trade bill was approved last week by the House Commerce (Harris) Committee by a vote of 20 to 9. The bill now goes to the House Rules Committee, where it faces formidable opposition (PW—Apr.17'59,p62).

The bill would permit suppliers to set minimum resale prices for their products without the approval of retailers.

•

The growth prospects of Alaska have led Texaco Inc. to build up its marketing facilities there. The company is constructing bulk plants in Anchorage and Seward, and plans another for Fairbanks. A new chain of Texaco service stations will begin filling the tanks of Anchorage autos in July.

•

Texas motorists who use expired or revoked credit cards will be fined up to $50 if Gov. Price Daniel approves HB-356, which passed the state legislature last week.

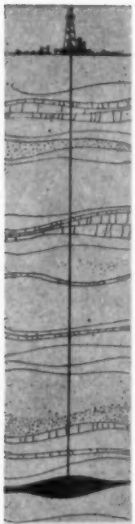
•

The marketers of the American Petroleum Institute will examine the troublesome problem of dealer turnover at their Des Moines (Iowa) meeting next week. Primarily they will study the pressures on new dealers—where most of the turnover occurs (PW—May1,'59,p55).

•

To snare the TV-owning motorist, oil companies poured $27-million into TV advertising last year—9% more than in 1957. Shell Oil Co. spent the most: $3.3-million.

Shell spent $3.2-million on out-door advertising last year, leading the industry in that category too (PW—Mar. 27,'59,p51).



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who understand
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"that's the bank for my money!"

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DEPT/Service & Equipment Companies

CRAIG M. ROWLEY has been named executive vice-president and general manager of Parkersburg Rig & Reel Co., Parkersburg, W. Va. He was most recently manager of manufacturing and assistant to the president, with headquarters at Parkersburg's Coffeyville (Kan.) plant. Before joining Parkersburg in 1957, he was chief petroleum engineer in Venezuela for Sinclair Oil & Gas Co.

C. M. Rowley

H. A. Helms

HAMMOND A. HELMS has been elected vice-president and general manager of the Baash-Ross Division of Joy Mfg. Co., Houston. He succeeds **G. D. Johnson,** who continues as a consultant to the company. Helms comes to Joy from Chance Vought Aircraft, Inc., Dallas, where he was controller and a member of the executive committee. Before joining Chance Vought, he was associated with the Security Engineering Division, one of the Dresser Industries.

BEN H. WOOTEN, president of the First National Bank in Dallas, is one of nine business and professional men to receive 1959 Horatio Alger Awards from the American Schools & Colleges Assn. "The awards are dedicated to the free enterprise system and the American tradition of equal opportunity which enables a youth to overcome his humble beginnings and achieve success in his chosen field."

B. L. BOCCELLA moves up to assistant manager of operations of the Baroid Division, National Lead Co., with headquarters in the general offices in Houston. He was formerly manager of Baroid's Mid-Continent area, with offices in Tulsa. **Kemp S. Lewis,** formerly assistant area manager in the lower Texas Gulf Coast area, at Corpus Christi, replaces Boccella as Mid-Continent area manager. **G. G. Allen** becomes assistant manager at Corpus Christi, succeeding Lewis. He was previously area engineer in the Louisiana Gulf Coast Area. **J. M. Bugbee, Jr.,** becomes an assistant manager of the lower Texas Gulf Coast area, with headquarters at Houston. He was formerly marine superintendent at New Orleans. **R. K. Epps, Jr.,** has been appointed assistant chief drilling mud engineer, with headquarters in Houston. Epps, with Baroid since 1951, has been area engineer for the lower Texas Gulf Coast area.

BOB R. NEAL is the new president of Harley Sales Co., Tulsa, oilfield distributor for Wisconsin Motor Corp. He was formerly Harley's sales manager.

C. L. Power, Jr.

J. B. Stewart

CHARLES L. POWER, JR., becomes district manager in Shreveport, La., for the Dowell Division of Dow Chemical Co., and **JOSEPH B. STEWART** succeeds him as manager of Dowell's New Orleans district. Power, with Dowell since 1936, was appointed New Orleans district manager in 1949. Before that, he was sales engineer in the New Orleans area. Stewart will move to New Orleans from Dowell's general offices in Tulsa, where he has been manager of technical service and development operations since January. **J. A. Harmon,** formerly district engineer in Wichita Falls, Tex., succeeds Stewart in Tulsa. At the same time, **James P. Hobbs** moves to New Orleans as district sales manager. He leaves a special assignment for Dowell, in Odessa.

CARL J. MAKI has joined Dresser Industries, Inc., as assistant to the executive vice-president, in Dallas. He was most recently assistant to the manager of the gas division of Texaco Inc. He was with Seaboard Oil Co. as gas department manager until that company was merged with Texaco in 1958.

C. J. Maki

J. J. Rosecky

JOSEPH J. ROSECKY has been named executive vice-president of Clark Bros. Co., Olean, N. Y., one of the Dresser Industries. He succeeds **F. W. Laverty,** who recently became president. Rosecky joined Clark in 1957 as vice-president of operations. Before that, he served with Baldwin-Lima-Hamilton Corp. as vice-president and general manager of the Eddystone division.

JOSEPH W. SCHALL is head of process and catalyst sales to the petroleum and petrochemicals industries for Houdry Process Corp., Philadelphia. He reports to **Rophie E. Bland,** Houdry's manager of sales for the western hemisphere.

CHARLES W. HOPKINS has been named manager of a new office and warehouse recently built by U.S. Steel Corp., Supply Division, in Arlington, Tex., [midway between Dallas and Ft. Worth.] Hopkins, who has been with U.S. Steel for 32 years, was most recently manager of the division's Dallas warehouse.

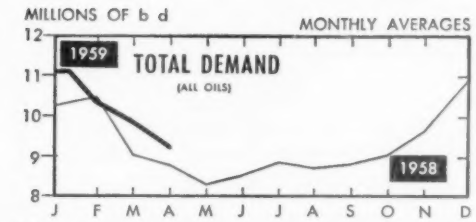
COME SEE US AT THE I.P.E. Our display will include working models of our latest money and man-hour saving lease automation equipment, plus many other Enardo specialty items which have become standards in the industry. Our booths are just inside the west main door of the Oklahoma Building.

- Vapor Control
- Pipe Line
- Tank Equipment
- Float Controls
- High & Low Pressure Motor Valves
- High & Low Pressure Well Head Controls
- New Vari-trol Pilot, Non-Bleed
- Tank Level Control—Automatic
- Meter Vessel Control Kits
- Four-Way Manifold Valve
- Manifold Tees

Enardo Manufacturing Company BOX 1647 TULSA

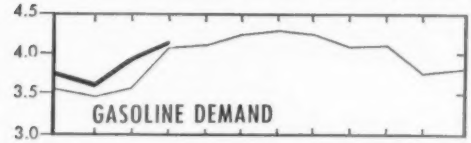
PETROLEUM WEEK'S

Fingertip Figures



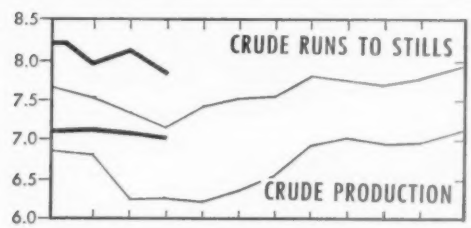
TOTAL DEMAND

Latest 4-week average	9.009
Year ago	8.575



GASOLINE DEMAND

Latest 4-week average	4.413
Year ago	4.138

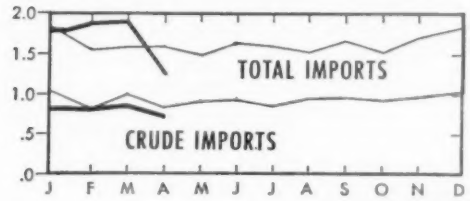


RUNS TO STILLS

Latest week	7.684
Previous week	7.722
Year ago	7.479

CRUDE PRODUCTION

Latest week	7.178
Previous week	7.200
Year ago	6.262

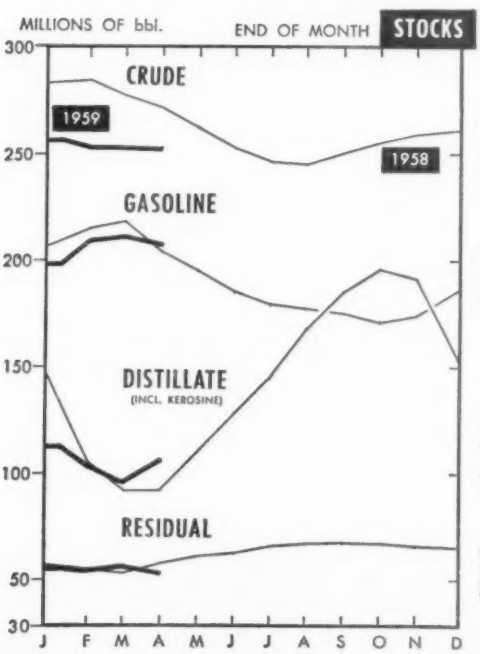


TOTAL IMPORTS

Latest week	1.324
Previous week	1.374
Year ago	1.283

CRUDE IMPORTS

Latest week	.904
Previous week	.828
Year ago	.802



CRUDE STOCKS

Week-ended 5-9	255.8
Previous week	255.0
Year ago	274.0

GASOLINE

Latest week	206.6
Previous week	208.5
Year ago	198.3

DISTILLATES

Latest week	112.2
Previous week	109.3
Year ago	101.1

RESIDUAL

Latest week	54.6
Previous week	55.6
Year ago	59.5

The reduction in the Texas allowable for June of 282,414 b/d did not come any too soon, as far as many oil economists are concerned.

The sharp cut ordered this week, to an initial allowable for June averaging 2,904,414 b/d, should serve to hold refiners down to "more reasonable" levels, according to one close observer.

He notes that if runs in May could be held to 7,750,000 b/d—a level now indicated—followed by no measurable gain in June, then the present surplus gasoline inventories might be corrected.

Runs at less than 7.8-million b/d in May and June, he adds, would mean a 15-million bbl. drop in gasoline stocks in June, assuming demand continues at the expected level.

Such a reduction would trim gasoline stocks to about 183-million bbl. by July 1, or 3-million bbl. under last year.

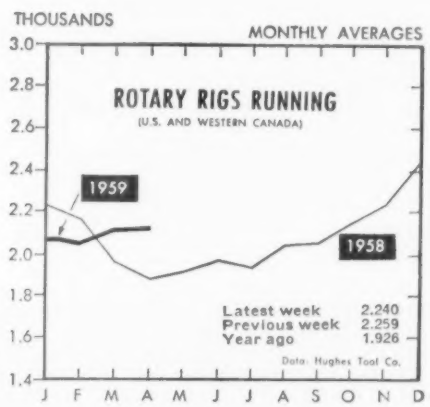
Gasoline stocks in the last five weeks have dropped only 6.2-million bbl., compared with an 11.3-million bbl. drop in the like 1958 period.

The economists reason that a cut in crude availability will hold refiners down, since it's obvious that some are running high to build up an import history.

Independent producers led the demands for a reduction in the Texas producing schedule to a ten-day basis for June, two less than now permitted.

E. L. Wilson, of Dallas, said: "It's clear that there is a market for only ten days' production. . . We need to make a drastic cut to try to straighten things [inventories] out."

Six large buyers—Humble, Atlantic, Standard of Texas, Standard of Indiana, Magnolia, and Shell—requested ten days.



Latest week	2.240
Previous week	2.259
Year ago	1.926

Data: Hughes Tool Co.

The Market Trend

LP-Gas Prices in Second Break this Year

LP-gas is becoming more and more like electric appliances—everyone wants it at a discount. And more and more buyers are finding they can get it that way. It doesn't matter whether they buy on a spot or a contract basis.

It's a sick way of selling, this bargain psychology, according to some LP-gas manufacturers who lament its spread in the industry. Time was when a price was a price—now it's more a point of departure. More important than the price is how much "off" a buyer can get.

Contract propane prices dropped 0.5¢ gal. at most points last week, marking the second decline this year. The cut was made in three different ways: Some increased their previously announced summer-fill discounts. Some reduced their base prices, leaving discounts intact. Others, who have not had summer-fill programs, cut their base prices.

The spot propane market has been getting soft for some weeks. Before this last drop in contract prices, there were reports of large quantities of propane being sold spot at 1¢ a gal. under the 4.5¢ Group 3 contract price. And out in West Texas, a buyer could pick up sizable amounts to fill his caverns at prices as low as 2.5¢ a gal.

Discounts haven't been confined to the spot market or to the announced summer-fill allowances. Some in the trade say a few big-volume contract buyers have been able to get propane at 0.75¢ gal. off the prices quoted in their contracts.

Buyers no longer can be scared into taking product during the off-season by the threat of shortages in the winter, because LP-gas production has risen so rapidly in recent years. This hurts sales to resellers in the summer months. On the other hand, if the prices fall far enough, the big marketers will buy for underground storage.

How much of a recovery propane prices make next fall depends to some extent on how much of a drop occurs this summer. Some sellers are thinking in terms of a Group 3 price of 5.5¢ a gal. or even 6¢ a gal. for the next heating season, and say the current 4¢ contract price isn't a bad base for a sharp comeback.

Shipyard Quotes Have Fallen:

A Norwegian tanker, still in the yard, was resold recently for $150 a deadweight ton. The ship was contracted for in palmier days for $210.

This decline is typical of what has happened to shipyard quotations around the world. Top prices were paid in late 1956, up to $230 a ton. Today, you can get a 30,000-tonner built in Japan or in Europe for about $140.

R. R. Diesel Cut:

Railroad diesel prices were sliced 0.25¢ a gal. in upstate New York last week, and 0.2¢ at Philadelphia and Baltimore. At Buffalo, "economy diesel" was quoted at 10.75¢. The new price at Philadelphia and Baltimore, delivered into cars, is 9.75¢.

New York Opens Bids:

This is the big week in New York City. The Housing, Education, Purchase, and Transit Depts. all open bids for oil supplies. The biggest request is for Housing—91.6-million gal., up 10.1% from a year ago.

The Market Place

AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of May 18

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 98 oct prem 12-13
- Gasoline, 92 oct reg 10.75-11.5
- **Kerosine ..... 9.125↓-10.375**
- **Heating oil, No. 2 ..... 8.625↓-9.875**
- **Gas oil, 48-52 d.i. ..... 8.875↓-10.125**
- Fuel oil, bunker "C" $2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130 16
- Gasoline, 93 oct research prem 11
- Gasoline, 87 oct research reg 10.125
- Gasoline, 79 oct research 9.125
- Gasoline, 70-72 oct motor method 9
- **Kerosine ..... 9.375↓-9.75**
- **Heating oil, No. 2 ..... 8.625↓-9**
- **Gas oil, 48-52, d.i. ..... 8.875↓-9.25**
- Fuel oil, bunker "C" $2.00

New York Harbor, barges
- Kerosine 11
- Heating oil, No. 2 ..... 10-10.5
- Fuel oil, No. 6 ..... $2.37-2.45

Okla-Group 3, northern shpt., bulk
- **Gasoline, 89 oct reg ..... 11.5↓-12.5**
- Kerosine 10.25-10.75
- **Heating oil, No. 2 ..... 9↓-9.5**
- Fuel oil, No. 6 ..... $1.80-1.90

Chicago, bulk
- **Gasoline, 91 oct reg ..... 11.75↓-12**
- **Heating oil, No. 2 ..... 10↓-11.35**
- Fuel oil, No. 6 high sulfur 7.4-7.5

Los Angeles, rack
- Gasoline, 88 oct reg 11.5-12.65
- Diesel fuel, PS 200 ..... 8.5-11.25
- Light fuel, PS 300 ..... $2.80
- Heavy fuel, PS 400 ..... $2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3 ..... 4.5
- FOB Breckenridge, Tex. 4

LP-Gas
- **Propane, Oklahoma (Group 3) ..... 4*↓**

Pennsylvania Lubes
- Bright stock, 25 p.t. 22
- 200 vis. neutral, 25 p.t. 21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v.i. 23-24
- Neutral, solvent, 200-210 vis. 19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i. 24
- Neutral, solvent, 200 vis. 20.5

**Effective May 12.*

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130 ..... 17.25
- Gasoline, 79 oct research 9.75
- Kerosine 10.75
- Gas oil, 48 d.i. minimum 10.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg., of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 ..... $2.77-2.97
- North Dakota, 36.0-36.9 ..... 2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 ..... 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9 ..... 2.92-3.22
  - West Texas, sweet, 36.0-36.9 ..... 3.00
  - West Texas, N. M., inter., 36.0-36.9 ..... 2.93
  - West Texas, N. M., sour, 32.0-32.9 ..... 2.71
  - East Texas, flat 3.25
  - Mirando, 28.0-28.9 ..... 3.31
- Illinois Basin, flat 3.00
- Pennsylvania Grade, Bradford dist., flat 4.25
- California, Signal Hill, 21.0-21.9 ..... 2.50-2.54†
- North Louisiana-Arkansas, 36.0-36.9 ..... 2.77-3.02
- Wyoming, sweet, 36.0-36.9 ..... 2.85-2.90
- Wyoming, sour, 32.0-32.9 ..... 2.63-2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.) $2.47
- Leduc-Woodbend (Alta.) 2.53
- Redwater (Alta.) 2.42
- Daly (Man.) 2.21
- Smiley (Sask.) 2.18

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 47.0-47.9, Tucupido $3.34
- San Joaquin, 41.0-41.9, Puerto la Cruz 3.10
- Oficina, 35.0-35.9, Puerto la Cruz 2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay 2.30
- Bachaquero, flat, Las Piedras 1.73-1.88
- Tarra, 38.0-38.9, San Lorenzo 2.83
- Lagunillas Heavy, flat, Cardon 2.10

†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura $1.89-1.90
- Safaniya, 27.0-27.9, Ras Tanura 1.50
- Iran, 34.0-34.9, Bandar Mashur 1.86-2.04
- Iran, 34.0-34.9, Abadan 1.81
- Iraq, 35.0-35.9, Fao 1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi 1.67
- Qatar, 41.0-41.9, Umm Said 2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud 1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud 1.38

Middle East, Eastern Mediterranean
- Arabian, 34.0-34.9, Sidon $2.27
- Iraqi, 36.0-36.9, Tripoli, Banias 2.31

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, flat $2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- U. S. Gulf-New York, clean ..... (USMC—37¼%) $1.78
- U. S. Gulf-New York, dirty ..... (USMC—37½%) $1.78
- NWI-USNH, dirty ..... (USMC—65%) $0.96
- NWI-UK/Cont., dirty ..... (Scale—30%) 22/9*
- Persian Gulf-UK/Cont., dirty ..... (Scale—70%) 20/10*
- **Persian Gulf-USNH, dirty .. (USMC—75%) $3.18↓**

**Sterling.*

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DEPT/Personals

PAUL E. TALIAFERRO has been elected president and chief executive officer of Sunray Mid-Continent Oil Co., Tulsa. He succeeds **W. C. Whaley**, who has been named chairman of the executive committee. Taliaferro joined Sunray in 1931 as general attorney, and has been executive vice-president since 1952.

H. D. Armstrong P. E. Taliaferro

H. D. ARMSTRONG is the new treasurer of Standard Oil Co. of California, San Francisco. He succeeds **H. C. Judd**, who is retiring after 28 years with the company. Armstrong joined California Standard in 1943 as assistant treasurer, and was appointed assistant to the chairman in 1947. He is a director of California Texas Oil Corp. and related foreign companies of the Caltex group, which is owned 50% by California Standard. He is also vice-president of Iran California Oil Co., which manages Standard's 7% interest in the Iranian Consortium.

J. P. CALLUM, formerly head office retail manager, is now manager of reseller sales for Shell Oil Co. of Canada, Ltd., Calgary. **H. M. Boles**, formerly manager of Canadian Shell's central division, is now manager of product and consumer sales, and **J. P. Secord**, formerly head office marketing training manager, succeeds Boles. **G. S. Morrison** fills the newly created position of manager of administrative services in the marketing section of the home office. He was formerly head office lubricants manager.

GEORGE CREE, JR., was reelected president of the Panhandle Producers & Royalty Owners Assn., at its annual meeting in Amarillo, Tex. this month. Other officers reelected are: **Porter L. Oakes**, executive vice-president; **Billy B. Davis** and **J. W. Collins**, vice-presidents; **F. V. Wallace**, secretary; and **Frank Storm, Jr.**, treasurer.

T. S. BROOKS is the new southwest petrochemical sales representative, and **George Owsley** petrochemical distribution supervisor, in Delhi-Taylor Oil Corp.'s chemical division. Both men will be headquartered at the company's refinery office, in Corpus Christi.

W. T. (Bill) KENNEDY moves to Libya as manager of operations for Ohio Oil Co. of Libya. He was formerly superintendent for production in Ohio Oil Co.'s Los Angeles division. **D. V. Kitley** transfers from Midland, Tex., where he was district production superintendent, to become acting division production superintendent in Los Angeles.

DR. CLARKE L. COLDREN has taken an assignment with Shell Pipe Line Corp., in Houston. He is currently an engineer in the mechanical and electrical engineering department of Shell Development Co.'s Emeryville (Calif.) laboratories. In his new position, he will be manager of Shell Pipe Line's technical development laboratory.

DONALD M. WEST is the new exploration manager for Mobil Exploration Mediterranean, Inc., in Ankara, Turkey. For the past three years, he has been in charge of exploration activities in Libya for Mobil Oil of Canada, Ltd.

W. H. Barlow G. F. Bish C. A. Jackson

W. H. BARLOW, G. F. BISH, and **C. A. JACKSON** have been elected directors of Ohio Oil Co., Findlay. Barlow, who joined Ohio in 1942 as a petroleum engineer in the Tulsa production division, became assistant chief petroleum engineer in 1952. He has served as manager of research since 1954, and is now manager of research and planning.

Bish joined Ohio in 1924 as a roustabout in Louisiana, and in 1954 became assistant manager of domestic production. He became a vice-president and manager of domestic production earlier this month. Jackson, with the company since 1933, was appointed assistant controller in 1943, and assistant to the president in 1951. He is now treasurer.

R. T. Burton

W. Holst

RUFUS T. BURTON and **WILLIAM HOLST** are new directors of Standard Vacuum Oil Co., White Plains, N. Y. Burton is Stanvac's regional vice-president for Australia and New Zealand, and Holst is manager of the company's economic coordination department. Both men are located in White Plains.

BERT E. SAGER is the new vice-president of Dellson Drilling Co., Denver. For the past several years he has been associated with Brinkerhoff Drilling Co. and Dunbar Drilling Co., in Illinois.

QUINCY V. TUMA has been promoted to chief safety engineer for the southwestern division of the employee and public relations department of Texaco, Inc., with offices in Houston. **Kraus Earhart,** formerly staff assistant in the department in Houston, succeeds Tuma as Houston safety supervisor.

D. G. SHINGLEDECKER is the new mainline superintendent of New York State Natural Gas Corp., with headquarters in the company's main office in Pittsburgh. Shingledecker, with the company since 1952, was most recently assistant superintendent of the company's central division, in Jacksonville, Pa. Before joining New York State Natural Gas, he was associated with Peoples Natural Gas Co.

RAY G. MARVIN is the new division geologist in the Rocky Mountain and Williston Basin division of King-Stevenson Oil Co., with headquarters in Denver. He has previously been associated with Stanolind Oil & Gas Co., DeKalb Agricultural Assn., and Tennessee Gas Transmission Co.

R. G. Marvin

T. Herndon

THOMAS HERNDON has joined the geological department of Apache Oil Corp., Tulsa. He was formerly director of geological projects for McCoy Associates, Tulsa, and a staff geologist for Continental Oil Co. in Casper, Wyo.

DAN L. GARDNER has joined Northern Natural Gas Producing Co., Omaha, Neb., as chief production engineer. He was formerly associated with Crescent Petroleum Corp., Tulsa.

RALPH W. COLLINS, Midwest Oil Corp., Denver, was elected chairman of the Rocky Mountain district of API's production division at the recent meeting at Casper, Wyo. He succeeds **C. J. Christensen,** Pan American Petroleum Corp., Calgary, Alta. **J. M. Bunce,** Mud Control Laboratories, Casper, succeeds **W. A. McCullough,** McCullough Tool Co., Casper, as secretary-treasurer. Vice-chairmen elected at the meeting are: **Freeman Egolf,** Phillips Petroleum Co., Casper, for Wyoming; **R. L. Manning,** R. L. Manning Co., Denver, for Colorado; **Roy Fuller,** Amerada Petroleum Corp., Williston, for North Dakota; **F. C. Aldrich,** Ohio Oil Co., Sidney, for Nebraska; **J. Roy Dorrough,** Carter Oil Co., Billings, for Montana; **Clayton Johnson,** Equity Oil Co., Salt Lake City, for Utah; and **Claude Peavy,** Britalta Petroleum, Ltd., Calgary, for Canada.

R. W. Collins

W. O. Ham, Jr.

W. O. HAM, JR., has been promoted to general manager of Continental Oil Co.'s southwestern region, with headquarters in Ft. Worth. He succeeds **G. T. Pearson,** who has been named president and a director of Hudson's Bay Oil & Gas Co. Ltd., Conoco's Canadian subsidiary, in Calgary. Ham has been coordinator of reserves purchases in Houston since 1958. In 1956, he was named director of organization planning, with offices in Houston, and before that was assistant southwestern region general manager in Ft. Worth.

JAMES F. BELL has joined General Petroleum Corp. as manager of the company's new petroleum chemicals department, in Los Angeles. He was most recently executive vice-president of Northwest Natural Gas Co., in Portland, Ore.

F. C. ANDERSON and **R. W. FRENCH** were elected assistant comptrollers of Gulf Oil Corp. last week. Anderson has been departmental comptroller of the production department since 1958, and French has recently been appointed departmental comptroller of the crude oil department. Both men will continue to be responsible for accounting and related financial matters for the units that they were most recently associated with. They will continue to be located at Gulf's general offices in Pittsburgh.

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AS THE EDITORS SEE IT

Name-Calling Won't Win Friends

THE PETROLEUM INDUSTRY CONTINUES TO TALK about the lack of understanding the public has of its problems. And many spokesmen have urged that the industry should educate the public on the oil industry.

But what industry must remember is that it should educate itself first on its own problems before it attempts to talk to the public. For the industry continues to lack both unity and a complete understanding of the complexity of its own business.

No one could have been more pointed on this subject than H. S. M. Burns, president of Shell Oil Co., and board chairman of the American Petroleum Institute, in a talk before the Independent Petroleum Assn. of America at Phoenix, Ariz.

He bluntly told the group that, when industry indulges in name-calling before the public, the public naturally will believe what it hears. After all, the industry knows itself best.

Burns said he has no objection to nice, spirited, family quarrels; that they add interest to what might be otherwise a humdrum domestic existence. Then he added:

"But surely we can do a better job of presenting a united front to outsiders who are not members of our family."

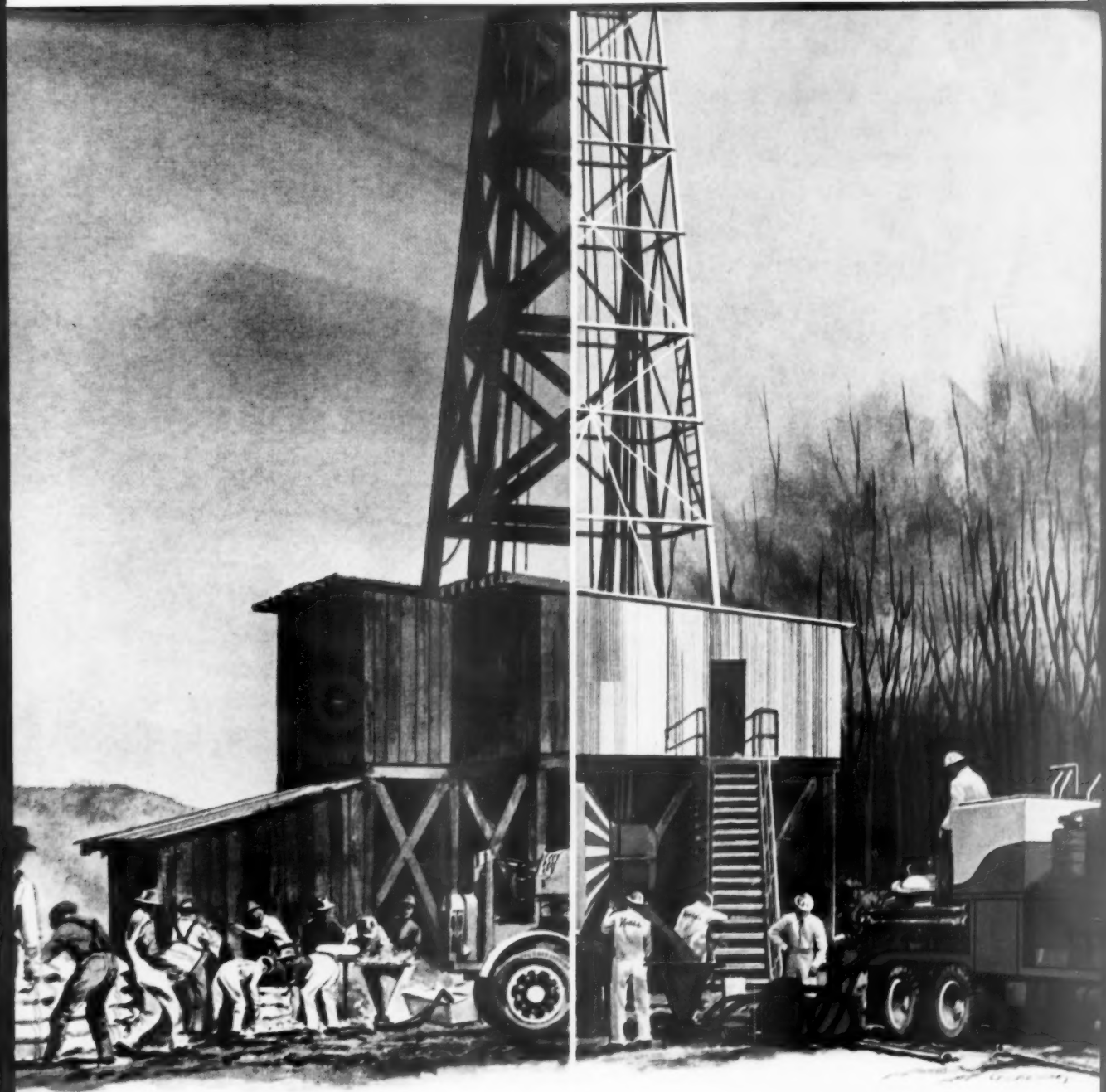
DEFAMERS OF THE INDUSTRY, in Burns' opinion, ignore the fact that the producing segment is particularly hazardous, in that there is no such thing as salvage of dry holes, and each exploration venture, in spite of all the scientific advances that have been made, still involves a very great risk of total loss of the investment.

Burns pointed out that in other branches of the industry, such as refining, transportation, and marketing, risks exist, but they are not so big. A refinery, he said, is still a refinery with considerable salvage value even if it isn't run very well and doesn't net the profits expected; the same is true for transportation equipment, and for marketing facilities.

But, in his opinion, there is no excuse for those who have devoted their capital to other segments only to abuse the more hazardous producing part of the industry.

In fact, Burns stressed that all anyone in other branches of the industry needs to get into the producing segment is money and one other commodity which, he said, "I am afraid is scarcer—guts."

IF YOU HAVEN'T GOT THE FORTITUDE to take the risks of another branch of the industry, in other words, then quit the name-calling and present a united front before the public. A united front is the only way understanding by the public ever will be reached.



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